EXHIBIT A

UNITED STATES BANKRUPTCY COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

In re: Stream TV Networks, Inc., (Stream) Debtor.	Chapter 11 Bky. No. 23-10763 (MDC)
In re: Technovative Media, Inc., (Technovative) Debtor.	Chapter 11 Bky. No. 23-10764 (MDC) (Jointly Administered)

DECLARATION OF STEPHEN BLUMENTHAL IN SUPPORT OF REMBRANDT 3D HOLDING LTD.'S OBJECTION TO MOTION OF WILLIAM A. HOMONY IN HIS CAPACITY AS CHAPTER 11 TRUSTEE FOR (I) AN ORDER (A) APPROVING THE BIDDING PROCEDURES AND FORM OF ASSET PURCHASE AGREEMENT FOR THE SALE OF SUBSTANTIALLY ALL OF THE DEBTORS' ASSETS INCLUDING APPROVAL OF PROVISIONS FOR DESIGNATION OF A STALKING HORSE, (B) ESTABLISHING THE NOTICE PROCEDURES AND APPROVING THE FORM AND MANNER OF NOTICE THEREOF AND SCHEDULING AN AUCTION, (C) APPROVING PROCEDURES FOR THE ASSUMPTION AND ASSIGNMENT OF CERTAIN EXECUTORY CONTRACTS AND UNEXPIRED LEASES, (D) SCHEDULING A SALE HEARING, (E) GRANTING EXPEDITED CONSIDERATION PURSUANT TO LOCAL RULE OF BANKRUPTCY PROCEDURE 5070-1(g); AND (F) GRANTING RELATED RELIEF, AND (II) AN ORDER (A) APPROVING THE SALE OF THE DEBTORS' ASSETS FREE AND CLEAR OF ALL LIENS, CLAIMS, ENCUMBRANCES, AND OTHER INTERESTS, (B) APPROVING THE ASSUMPTION AND ASSIGNMENT OF CERTAIN EXECUTORY CONTRACTS AND UNEXPIRED LEASES RELATED THERETO, AND (C) GRANTING RELATED RELIEF

1. My name is Stephen Blumenthal. I am the Managing Director-of Rembrandt 3D Holding Ltd. ("Rembrandt") a Nevis corporation.

2. The following facts are within my personal knowledge, except as noted, and are true and correct. I file this Declaration under 28 U.S.C. § 1746.

<u>The Plaintiff And Its Technology</u>

3. I am the sole shareholder and Managing Director-of Rembrandt.

4. Rembrandt holds title to the intellectual property developed by me and my former company 3DFusion Corp.

5. I am also the majority shareholder, President and CEO of Rembrandt 3D Corp. (“Rembrandt – Delaware”), a Delaware corporation.

6. Rembrandt – Delaware is an operating company selling glasses free 3D displays and content solutions but is not a party to this action.

7. Plaintiff Rembrandt 3D Holding Ltd. (“Rembrandt” or “Plaintiff”) is the successor-in-interest to 3DFusion Corp. (“3DFusion”), the original owner of the improved Philip’s 3DASD technology (or glasses-free 3D autostereoscopic display technology).

8. I was a co-founder of 3DFusion Corp. (“3DFusion”), the original owner of the improved Philip’s 3DASD technology (or glasses-free 3D autostereoscopic display technology).

9. In February 2016, I acquired all of the assets of 3DFusion and assigned all of 3DFusion’s assets to Rembrandt.

10. I own 100% of the outstanding shares of Rembrandt and I am the manager/CEO of Rembrandt.

11. My work with glasses free 3D technology goes back many decades and I founded 3DFusion, Rembrandt, and Rembrandt-Delaware to pursue the technology.

12. In 2005, Philips offered a Glasses-Free three-dimensional (3D) autostereoscopic display (“3DASD”) solution known as the WOWvx Platform for converting and generating 3D content from two-dimensional (2D) media content for rendering on Philips’s 3DASD monitors. The WOWvx Platform uses mathematical algorithms to add depth and stereoscopic information to 2D content (i.e., 2D+Depth) thereby creating 3DASD content.

13. Philips’s 3DASD solution suffered from significant image quality issues because the 3DASD content generated by the WOWvx Platform contained numerous artifacts such as ghosting and required weeks of manual post-processing to correct. Nonetheless, 3DFusion licensed the WOWvx Platform from Philips.

14. From 2007 to 2009 working with Philips licensed tools, through extensive experimentation and research comprising more than 3,000 hours of 2D-to-3D-depth-map rotoscoping, I developed a novel and non-obvious methodology to correct the image quality issues or artifacts in the 3DASD content generated by the Philips's WOWvx Platform. I termed this advancement the ‘adjustability solution.

15. In January 2010, 3DFusion and I started contracting and working with a team of engineers in Eindhoven, (the "Eindhoven Team") and registered a dutch B.V. with the Dutch Chamber of Commerce named, 3DFusionEU B.V. a wholly owned Dutch subsidiary of 3DFusion. The Eindhoven team all agreed to work with 3DFusion to develop 3DFusion’s technology under a confidentiality agreement.

16. 3DFusionEU started working with The Eindhoven Team for the purpose of eveloping and building my adjustability solution into their 2D+Depth 3DASD.

17. The Eindhoven team included Walther Roelen ("Roelen") a former 3DSolutions 3DTV lens designer, who was the Eindhoven team leader and the salaried 3DFusionEU, B.V. General Director, and Dr. Bart Barenbrug ("Barenbrug") a former 3DSolutions senior software engineer, who spent 14 months working with me on 30 client 3DASD projects, communicating with me on a daily basis. Both Roelen and Dr. Barenbrug are Dutch residents.

18. For convenience sake, the Dutch subsidiary was named "C3D" prior to its corporate formation. The name "C3D" was later changed to "3DFusion EU" as indicated in an email dated March 15, 2010 from Roelen.

19. In December 2009, I went to Eindhoven, Netherlands to demonstrate my adjustability solution to Roelen. Roelen contacted the former Philips 3DSolutions senior engineers, which resulted in 3DFusion negotiating a license with Philips to manufacture the Philips WOWvx platform and to upgrade the Philips products and tools. 3DFusion signed the Philips Technology License in April of 2010.

20. Prior to my December 2009 demonstration of my 3DFusion's proprietary technology to the Eindhoven Team, including Roelen and Barenbrug, all individuals, who were also all former Philips 3DSolutions employees, all agreed to an non-disclosure agreement.

21. The 3DFusion technology took two of the Philips tools which they considered ‘constants’ and used them dynamically to adjust and dial in the 3D image.

22. Through 2010, 3DFusion and the Eindhoven Team commenced bi-weekly teleconferences and exchanged numerous emails regarding the 3DFusion technology.

23. Meeting minutes were kept and describe the various technical and administrative issues addressed by 3DFusion and Eindhoven Team.

24. While 3DFusion had included some of the information and improvements in its patents, many other improvements were held as trade secrets and were disclosed and developed under non-disclosure agreements with the Eindhoven Team and 3DFusionEU.

25. This technology and 3DFusion’s business plans were eventually disclosed to Mathu Rajan, Raja Rajan, and Stream under non-disclosure agreements.

26. I and 3DFusion developed trades secrets and filed for its own patents far before I ever met any engineers from the Eindhoven Team or the Rajans.

27. 3DFusion Corp. has since dissolved and all of its rights to intellectual property and technology have been assigned to Rembrandt.

Meeting the Rajans and Stream

28. In June of 2010 I met Mathu Rajan and Raja Rajan when they came to the 3DFusion Wall Street showroom offices for a demonstration of our 3D glasses free platform.

29. The Rajans immediately signed NDAs to be able to review details of 3DFusion's technology and business plans.

30. At the time of this original June 9, 2010 NDA between Stream and 3D Fusion, (now owned by Rembrandt), Stream had no technology of its own.

31. In June of 2010, all rights were held by 3D Fusion and therefore all improvements to that technology made after the June 9, 2010 NDA were owned by 3D Fusion. The NDA reads:

> "2.3.3 all inventions, improvements, copyrightable works and designs, relating to business plans, marketing plans, technology, machines, methods, compositions, or products of Disclosing Party directly resulting from or relating to the Confidential Information and the right to market, use, license and franchise the Confidential Information or the ideas, concepts, methods or practices embodied therein shall be the exclusive property of the Disclosing Party, and the Recipient has no right or title thereto."

32. The original Stream and 3DFusion term sheet was negotiated and signed on September 28, 2010 by the Rajans and a copy is attached to the first amended complaint (Exhibit 1). Walther Roelen, the head of 3DFusion's Eindhoven team, betrayed his fiduciary duty and orchestrated the transfer of key 3DFusion assets and the Eindhoven Team to Stream TV Network in January of 2011. This is the same Eindhoven Team that was working with Stream, then SeeCubic.

33. The original technology developed by me and 3DFusion was disclosed to Stream and is the basis for the improvements over the old Philips technology. Rembrandt owns all the rights to the underlying technology and business plans along with all improvements. These advancements are fully integrated into all the Stream technology and products. Specifically, Rembrandt has identified with particularity how all the products sold by Stream have included Rembrandt technology and infringe Rembrandt patents.

34. These events and agreements were the basis for the Rembrandt lawsuit filed against Stream, Mathu Rajan, and Raja Rajan.

Procedural Background

35. Plaintiff filed a complaint in the New York State Supreme Court in January 2017 against Stream TV Networks, Inc, Mathu Rajan, and Raja Rajan.

36. Defendants removed the state action to the United States District Court for the Southern District Of New York.

37. Rembrandt filed a first amended complaint (Attached as Exhibit 1).

38. Rembrandt, Stream, Mathu Rajan, and Raja Rajan reached an initial Settlement Term Sheet executed by Shadron Stastney (executing on behalf of Stream) on April 9, 2019 (Attached as Exhibit 2).

39. Despite having full knowledge of Rembrandt's intellectual property rights and the trade secret claims, neither Shadron Stastney nor SeeCubic ever provided Rembrandt with any notice of the Omnibus Agreement or SeeCubic's attempts to transfer Rembrandt's technology to its control.

40. Rembrandt was put on notice of Stream's Chapter 11 bankruptcy proceeding, and through its counsel, Rembrandt sent an email to Stream's bankruptcy counsel (Attached as

Exhibit 3), the counsel for creditors (Attached as Exhibit 4,) and the counsel for SeeCubic (Attached as Exhibit 5) on April 20, 2021 to make sure they all knew about Rembrandt's ownership of the technology and to invite resolution.

41. The case was settled by agreement among Rembrandt, Stream, Mathu Rajan, and Raja Rajan on May 23, 2021 (Attached as Exhibit 6).

42. Rembrandt also joined with other creditors to pursue an involuntary bankruptcy petition for Stream and as part of its filings in support of the involuntary petition, Rembrandt filed declarations by me (Attached as Exhibit 8) and Christopher Michaels (Attached as Exhibit 9).

43. Rembrandt has sent direct communications to counsel for both SeeCubic and Hawk putting them on notice of Rembrandt's rights, yet both entities continue to pursue attempts to take Rembrandt's technology without a license.

Mediation Conferences and the Settlement Term Sheet

44. At the First Mediation Conference, Plaintiff demonstrated the 3DASD technology using the original 3DFusion equipment.

45. This identical equipment was featured in a news article dated January 25, 2011 published by The Flying Kite Media, a Philadelphia based online magazine (the "2011 News Article"), wherein Stream showcased 3DFusion's laptop and video content and passed off 3DFusion's technology as their own while referencing a non-existent company in Fremont, California as the source of the technology. (2011 News Article entitled "How Philly Is Leading The Glasses-Free 3D Revolution"). The article showed my laptop and content I created while quoting Mathu Rajan claiming to own 3DFusion's technology.

46. Stream clearly had no reasonable explanation for stating publicly that it owned my laptop, technology, and content and the mediation and continuing settlement negotiations proceeded in similar fashion with Rembrandt continuing to provide further evidence of its technology without so much as a single word, email, or any other document showing any evidence of development by Stream prior to receiving 3DFusion's technology.

47. After the First Mediation Conference, and for the following six months, the parties corresponded settlement terms via email and conducted several in-person settlement conferences at Stream offices in Philadelphia with me, Christopher Michaels, and Neil Wallace representing Rembrandt, and Raja Rajan representing himself, Mathu Rajan, and Stream.

48. The parties exchanged various proposals and Rembrandt continued to informally share additional evidence documenting the various trade secrets and prior communications between the Eindhoven Team and 3DFusion.

49. As part of these negotiations, a list of Rembrandt Trade Secrets was developed and included as Schedule A to drafts of the settlement term sheet, specifically, the parties had agreed that the following list of Rembrandt trade secrets were to be licensed to Stream as part of any settlement:

> "Knowhow and trade secrets related to methodology for:
>
> i. efficiently converting, correcting and optimizing a 2D+Depth video for playback on a 3D autostereoscopic associated with the Philips technology
>
> ii. utilizing the Philips 2d Switchable Lens technology for refractive and diffractive lens switching for the creation of the 'lightfield' and 3d content artefact correction.
>
> iii. utilizing the On Screen Display functions of Borders and "Liveliness."

50. On January 11, 2019, more than six months after the First Mediation Conference, Magistrate Judge Parker ordered the parties to attend a second settlement conference in person with counsel on April 9, 2019 (the "Second Mediation Conference"). [Dkt# 67]

51. On April 9, 2019, the Second Mediation Conference commenced at 10 am, attending by telephone were: Messrs. Raja Rajan and Mathu Rajan (in their individual capacities); attending in person at the Second Mediation Conference for the Defendants were: Mr. Shad Stastney (former CFO and former Director of Stream TV), Mr. John Wellschlager (former counsel to Stream and the Rajans) and Mr. Neal Kronley (former counsel to Stream and the Rajans). Attending for the Rembrandt were me (Director of Rembrandt), Mr. Christopher Michaels (counsel to Rembrandt), and the Mr. Chi Eng (counsel to Rembrandt). The parties negotiated the various terms in the Redlined Term Sheet through Magistrate Judge Parker.

52. The redlined terms sheets had been developed through multiple meetings and email exchange of versions between Stream and Rembrandt from October 2018 to April 2019.

53. By late afternoon, after the parties reached mutual agreement to the various negotiated changes to the Redlined Term Sheet, Mr. Kronley made hand-written agreed modifications thereto; the parties, with Mr. Stastney representing Stream and I representing Rembrandt, then indicated assent by mutually initialing the modified Redlined Term Sheet; Magistrate Judge Parker then affixed her signature thereto (the "Settlement Term Sheet" attached as Exhibit 2).

54. The Settlement Term Sheet executed by Mr. Stastney did not modify the list of licensed trade secrets from prior drafts of the terms exchanged between counsel for the parties with the immediate draft prior to the settlement conference having been draft by DLA Piper

(counsel for Stream working with Mr. Stastney) and the revisions during the conference were all made by Mr. Kronley of DLA Piper.

55. Eventually, Rembrandt, Stream, Mathu Rajan, and Raja Rajan fully executed a settlement agreement on May 23, 2021 that included the same list of Rembrandt trade secrets used in the Settlement Term Sheet.

56. While capably represented by DLA Piper and under review and approval of a Magistrate Parker, Rembrandt, Stream, Mathu Rajan, Raja Rajan, and Shadron Stastney have all approved of the list of trade secrets owned by Rembrandt and licensed to Stream.

57. Every TV sold by Stream incorporated the enumerated know-how and trade secrets and but for the license, infringed the patents referenced in the term sheet, so this settlement was and is essential for Stream (or any assignee or successor) to continue selling product free of infringement allegations.

58. Stream agreed to pay Rembrandt $5,840,000 in cash, 2,000,000 warrants to purchase Stream stock, 100 4K TVs for no charge, 8 8K prototypes at no charge, and the right to purchase 3,015,000 8K 3DASD LCD units at cost.

59. Rembrandt-Delaware previously purchased a Stream TV for $5,250, so it is estimated the value of the no charge TVs and the 8K prototypes to be about $567,000.

60. Mr. Stastney during various settlement meetings that the Stream margins would be about $400/unit during early commercial scale production and then drop to as low as $120/unit during very high volume production in later years

61. Based on Shadron Stastney's statements during mediation, the ability to purchase 3,015,000 units at cost was worth approximately $400/unit x 3,015,000 units = $1,206,000,000 at the high end and $120/unit x 3,015,000 units = $361,800,000 at the low end.

62. In other words, the total value of the settlement agreement between Stream and Rembrandt is far greater than all the secured and unsecured Stream creditors' claims combined.

Summary of the Trade Secrets – Overview of the Eindhoven Team and 3DFusion Connection

63. The trade secrets reflect a wide range of improvements developed by me and the 3DFusion team over the course of 14 months.

64. Roelen was the former Philips 3DSolutions Inc. lead 3D autostereoscopic display (3DASD), no glasses, technology platform optical lens designer, working under my supervision and was the acknowledged Eindhoven Team leader.

65. He was the General Director of and employed by the 3DFusion EU, B.V. which was the wholly owned subsidiary of the 3DFusion, whose assets and rights were acquired by Rembrandt.

66. Roelen was introduced to me in 2009 when I made an on-site presentation of my 3DASD break through advancements in Eindhoven. Upon viewing my platform, Roelen immediately contacted the former senior management team, who had been dispersed following the 2009 shut down of the Philips 3DSolutions 3DASD incubator.

67. This demonstration resulted in the 3DSolutions senior management team going to the Philips Intellectual Property and Standards Division, (IP&S), the Philips Licensing entity and recommending that 3DFusion be given preferential treatment and be allowed to become the first recipient of a license to Philips portfolio of the full 800 patents related to 3DASD. 3DFusion and Philips signed this license in May of 2010.

68. Based on statements from the 3DFusionEU Minutes, the 3DFusion Eindhoven Team were required to sign NDA's for Philips IP&S on behalf of the 3DFusion EU B.V.

69. In March of 2010 Ms. Van Hamm. the 3DFusionEU secretary, sent an email to 3DFusionUSA stating that she had collected all the 3DFusion NDAs from the 3DFusionEU team members and forwarded them to Roelen. (Roelen later claimed to have lost them, but 3DFusion had them redrafted and re-signed in October of 2010.)

70. As of early May 2010, 3DFusion had exclusive ownership of the key intellectual property 2D+D solution, had hired the key technical expert Eindhoven Team responsible for inventing and advancing the Phillips WOWvx platform, had signed the Philips 3DASD WOWvx License, and 'owned' the first broadcast quality, no glasses 3DTV platform.

71. As of January 2010, Roelen started to work for 3DFusion Inc as the General Director for the 3DFusion EU B.V. subsidiary. Roelen organized and led the Dutch team under my direction for the purpose of reinitiating the technological development of the failed 3DSolution incubator's R&D's efforts as regards the Philips WOWvx, 2D Plus Depth (2D+D) technology. This is the future STVN tech team and the current SeeCubic tech team, all of whom had previously to my mentorship, failed to discover my solution, despite having the assets and support from working for the Royal Philip's 3DSolution, half a billion-dollar incubator.

72. From the January start, all parties understood and agreed that the purpose of the new entity was to integrate my discovered 2D+D solutions into their WOWvx platform.

73. I had previously filed a provisional patent application in 2009 to the aforesaid developments, which resulted from my previous two years of R&D utilizing 3DFusion's licensed 3DSolutions development tools.

74. The 2008 Provisional Patent was converted, filed and granted by the USPTO in 2013 and expanded into three USPTO patents.

75. Roelen's role as C.E.O of 3DFusion EU, B.V. is verified by his bank account salaried payments, Dutch Corporate documents, his emails stating his C.E.O. status, his signed NDA, and his email confirming the 30 developmental projects in which he directed the team's activities during the 2010 12-month R&D cycle.

76. Roehlen was the primary individual to whom 3DFusion and the Eindhoven team looked to for leadership, guidance and to exercise his fiduciary responsibility to protect 3dFusion's IP and trade secret discoveries. Roelen betrayed this trust and actively engaged in sabotaging 3DFusion EU's efforts by violating his ethical, technical and fiduciary responsibilities.

77. During this time, the team generated approximately 2,000 pages of emails, 1,000's of pages of documents, and spent 1,000s of hours working on content and sharing ideas and advancements.

78. As part of the discovery processing in the pending litigation that Rembrandt filed seeking Injunctive Relief for Misappropriation Of Trade Secrets (the "Delaware Complaint") in the United States District Court For The District Of Delaware against Technovative Media, Inc ("Technovative"), Hawk Investment Holdings Ltd. ("Hawk"), and SeeCubic, Inc.("SeeCubic"), Rembrandt has prepared a detailed list of trade secrets that was provided to SeeCubic’s counsel under a protective order as attorney eyes only. I have attached a list with the corresponding trade secret number that redacts the detailed description of each secret, but does list the documentary evidence supporting both the proof of development of the trade secret and the information provided to at least Barenbrug while Barenbrug was working with me at my prior company 3DFusion and is attached as Exhibit 10.

79. No attempt is made herein to explain all facets of each development, but rather to provide a reasonable summary of the technology in question that was unique and proprietary to 3DFusion and now Rembrandt.

Summary of the Trade Secrets - i. efficiently converting, correcting and optimizing a 2D+Depth video for playback on a 3D autostereoscopic associated with the Philips technology

80. 3DFusionEU generated two technology whitepapers titled, "3D Tooling" and "Fuser." These two documents sat front and center of many of the content conversion, optimization and playback operational developments which followed.

81. These methodologies were designed to be utilized as an auto-conversion means for creating a seamless 2D to 3D conversion imaging. They represent key foundational technologies which I believe are included in the design of auto A.I functions of the Ultra-D 3DTV, which when coupled with the 2D/3D switchable lens, diffractive / refractive optics gives birth to an artifact free 3DASD image.

82. For context regarding the following emails, the 3DFusion team termed the general conversion and optimizing methodologies, utilizing conversion algorithms and software tools for coding the “adjustments” of the factor and offset into the video as the "DRT". for 'Depth Range Tuning."

83. The 3DFusion team developed the DRT tools in 2010, after I visited the Eindhoven team in 2009 and demonstrated the '3D view' from the top of the mountain demonstrating manipulations of the depth maps and the factor and offset adjustments.

84. While the specific 3DFusion DRT tool developments were developed over 2010, they were based on the technology included in a patent application filed by me months before meeting any of the Eindhoven team in 2009.

85. All of the 'Depth Range Tuning advancements within 3DFusion and then later at Stream were made as derivative developments based on the technology developed by me and the 3DFusion team and are now incorporated into the Ultra-D technological platform.

86. The Eindhoven team started to refer to these adjustments as “Steve’s magic” and in one example, Bart Barenbrug, stated that “he’s a wizard at that for sure” “in a November 10, 2010 email to other members of the 3DFusion team.

87. In the communications between the 3DFusion team, reference is made to the “Blue Box,” which was the Philips 3DSolutions licensed software server for content editing, rotoscoping and mastering all 3D content into the Philips’s 3D format.

88. I worked with Vasili Philomin, a senior Philips software engineer and designer-based in Germany in 2008. Mr. Philomin was the primary developer and coder for the Blue Box depth mapping, and rotoscoping software tool package. 3DFusion had licensed these tools in 2007 as one of 3 USA Blue Box developers, of which there were only 25 worldwide.

89. In the following emails, the project names refer to the 30 3DFusion commercial projects.

90. The “Fuser” whitepaper was the foundation technological approach for the 2D to 3D conversion and by using the Blue Box as a test platform we were able to conceptualize a pre-automation level of content conversion designed to evolve into a fully automated 2D/3d conversion, in support of the WOWvx , 2D+Depth platform's application for what I believe to be a mass market consumer 3DTV. This advancement is key to the Philips 2D+D technological

platform as found inside the current STVN Ultra-D 3DASD and is central to its current development.

Summary of the Trade Secrets - ii. utilizing the Philips 2d Switchable lens technology for refractive and diffractive lens switching for the creation of the 'lightfield' and 3d content artefact correction."

91. Early on in 2008 when I began my foray into the use of the Philips 2D+D technology, I discovered the Philips 2D/3D Switchable lens paper: 7.4: Design of 2D/3D Switchable Displays, W. L. IJzerman, S. T. de Zwart, T. Dekker. Philips Research Laboratories, Professor Holstlaan 4, 5656AA Eindhoven, The Netherlands.

92. This paper denotes a variety of functions which can be developed to address a range of 3D imaging solutions, though it would be years until the derivative applications would become apparent through the work of the 3DFusion team. However, this paper gave birth to the logic that the 2D/3D switchable lens could be used to neutralize depth map ghosting artifacts.

93. As documented in the First Amended Complaint, (Attached as Exhibit 1), examples of meeting minutes are found referencing the 2D Switchable lens technology in Minutes, Feb. 17, March, 10 & 24 2010, where it is stated,

> *"Discussion on cost consequences for display which have 2D/3D switchable lenses instead non switchable lenses. Reply by HansZ that uplift cannot be made clear for the moment since this strongly depends on the material stack-up and optical properties of the LC-liquid (translates directly to price point). No news. "*
>
> *"Discussion on possible contribution of Corning Glass. Could be in the area of 2D/3D switchable lenses since Corning Glass might be able to coat ITO on glass lens shape. According to HansZ he had discussion couple of years ago in which it was concluded that Corning could not match specification requirements. According to StevenB, they say they can match now. Request to HansZ to deliver name of contact person at Corning Glass from old discussion to StevenB to check specification request delivered against current statement of Corning Glass (action HansZ). Steve has had long discussion with them and they are eager to get started. However, estimated time from conception to completion will be 18 to 24 months. According to Corning LED Backlight technology better than LCD, will also double life expectancy of display."*

94. This early exploration into the 2D3D Switchable lens (2d3dSW) application was continued through multiple discussions and emails. These developments culminated in me bringing Roelen to a meeting at Corning Glass of senior engineers on September 3, 2010. The purpose of the NDA covered meeting, was to explore the technology potential of a 3DFusion / Corning Glass joint partnership. At this 6-hour meeting were the top Corning LCD engineers and Dr. Robert Boudreau who led the Corning team.

95. We entered into discussions with Dr. Boudreau, a senior Corning Glass engineer who would later go onto fame as the Corning team leader for the development of the Gorilla glass product now found on all cell phones. (Dr. Boudreau is currently the V.P. of R&D for Rembrandt- Delaware)

96. During the meeting Roelen and the engineers covered four walls of blackboards with mathematical notations breaking down the specs for lens optical design and other issues. Upon exiting the Corning Glass meeting, on the drive back from Corning to Ithaca, Roelen made the following remarks. "I got it. I know how to do it. We can use the 2D switchable to fix the artifacts, Bart can write the code. We do don't need Corning; we can do it without them."

97. Roehlen later took the 3DFusion 2D switchable lens improvements to Stream.

Summary of the Trade Secrets - iii. utilizing the On Screen Display functions of Borders and "Liveliness"

98. 3DFusion developed adjustment capabilities that were not previously utilized by other 3D technology.

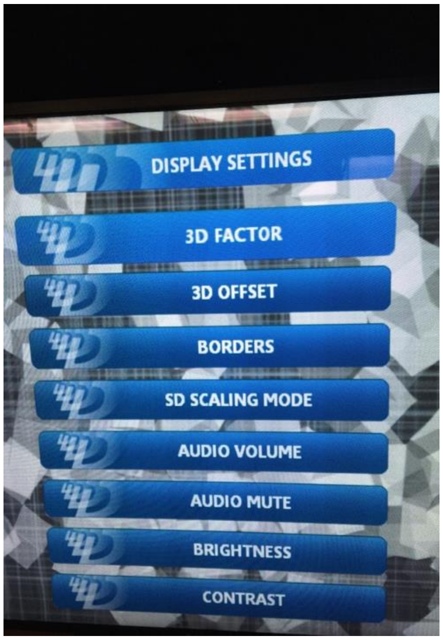
99. The following excerpts from an email from Bart Barenbrug summarizes the use of Borders in neutralizing the window violation artefact issue found in larger 3D auto stereoscopic screens.

> *Begin forwarded message:*
> *From: Bart Barenbrug <bart@c3d-vr.com>*
> *Date: February 21, 2010 12:54:21 PM EST*
> *To: steve.blumenthal@3dfusionusa.com*
> *Cc: Grazzy <grazina@threecubes.com>*
> *Subject: Re: More fun and Games? 3df*
> *Reply-To: bart@c3d-vr.com*
>
> *"How far you can go at little expense of time is more a question for Grazzy than anyone else, I suppose. Since we're not animating the Bertoia, don't waste effort on anything except a good poppy 3D effect demonstration. In order to create maximum pop, we want to be able to assign depth to foreground objects that makes them come out of the screen (in contrast to having depth behind the screen).*
>
> *This has an influence on composition that you could take into account when determining the final camera path for this test. The thing is that to safely pull an object out of the screen it can't be touching the borders of the image, because that gives a perceptual contradiction, commonly known in the stereographic community as a "window violation": on the one hand, the depth we assign will tell the viewer that the object is in front of the display, but on the other hand, it does seem to disappear behind the border of the display, which suggests a depth which is at least as far from the viewer as that border. Such perceptual contradiction detracts from the depth perception (the amount of pop) and can become discomforting in the long run. So in the composition, try to have objects that stick out in the middle, but recede in depth near the edges of the image. Then we can really make them pop.*
>
> *Bart*
>
> *P.S. Finally (on this topic), there is the idea of automatic remastering (for offline): we have a preliminary solution in the Philips software, which basically tries to find a factor and offset which will stretch the depth values to use as much of the 0-255 range as possible (always filling the whole depth range of the signal), with as only restriction some protection against window violations (making sure that the depth value at the borders is never more than a certain value, to ensure that only objects in the center of the screen, not touching the borders, can really come out veryfar).*
>
> *In Red Box this is done per frame, and in Blue Box/Spacer this is done (only for stereo conversion) on a per shot basis. I would want to take it out of the stereo specific case, and make it a general tool, and also want to add protection against*

ghosting: we should be able to analyze the sharpness of the 2D image for each depth level, and adjust the factor & offset for maximum effect, without introducing ghosting. This is more of a research topic, since we'd need to find a good (and cheap) way to determine sharpness, and also to find out for each sharpness value what the maximum depth off screen can be before it starts to ghost.

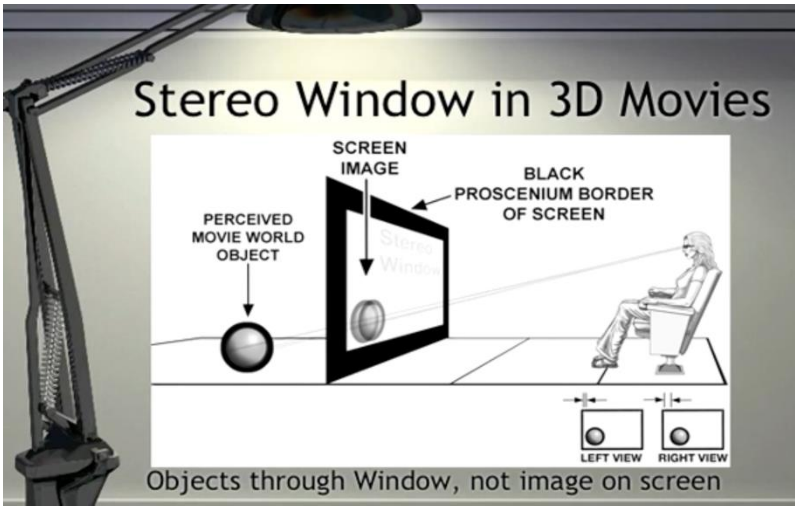
Bart

100. The 3DFusion invention for factor and offset patented 'adjustability' that was manifested as a functional screen image control could be operated either by the on-board A.I or by the manual manipulations of the user.



101. As seen in the Ultra-D On-Screen Menu, the trade secret development work termed 'BORDER"s, appears on the ULTRA-D 65" 3D On Screen Display Menu. It is both a user manual and A.I. driven automatic intervention based on the factor depth values in the zone identified as the Border, to accentuate the 3D objects center screen pop out effect, as described in Bart’s email.

102. This multiple featured mechanism is designed to correct window edge violations and to enhance the 3D impact of the forward "POP" off the screen, and by limiting the factor depth range thereby contributing to the creation of an artifact free 3D image. The borders menu provides for a depth map "factor” adjustment to be contained within a defined zone of the screen edge. See 'Border' from the Ultra-D On-Screen Menu



103. In classical 3D movie making depending upon the camera angles and the objective of the filming, a 'window of borders' was created which literally framed the 3D image. Its purpose was to break the visual cues which neutralized the 3D impact when objects touched the edge of the screen.

104. When you are looking at a 2D picture, you are looking at a flat object defined by edges of the screen, the depth cues are defined by the spatial sizes and shapes of the object in the image. Not so with 3D.

105. To the right is a screen shot of the Ultra-D On-Screen Menu, showing the 'Border' menu with the four sides of the invisible 'frame' defined by the positions 'top, bottom, left and right'. These are active Factor adjustment locations of defined factor zones set by the position of the numerical counter as seen in on the screen. They provide an invisible frame as seen in the window diagram above.

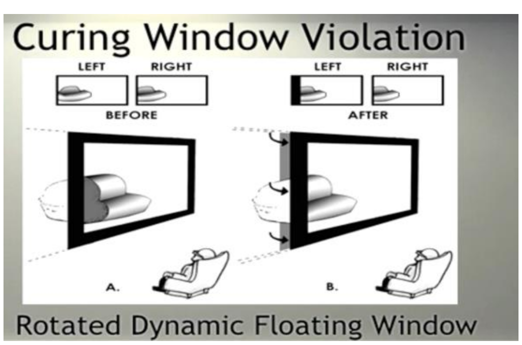
106. When the Ultra-D Border menu is clicked in the next menu, an adjustable Factor window opens permitting the user to set the location of the top, bottom, left or right side of the frame area. This zone is adjustable as needed depending upon the type of 3D content and the desired impact.

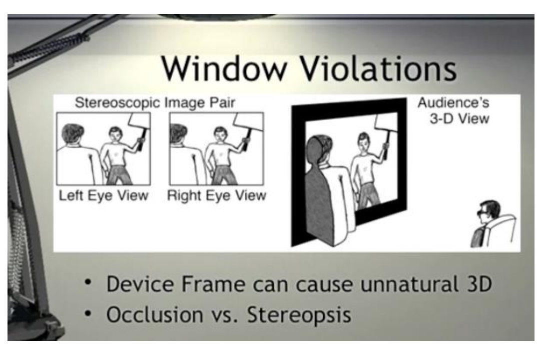
107. The thin line visible in the image below is the location of the invisible factor frame position setting, which is adjustable. This allows the user to select the factor setting, which position the frame edge zone as defined by the bottom factor as shown by the faint blue visual line running under the man's foot just above the bottom edge.

108. These manipulations are illustrated here for the User to make manual adjustments whereas the on board A.I. is utilizing algorithms to achieve an automatic seamless effect for correcting window violations.

109. When looking at a 3D picture, a person looks at objects floating in a space defined by the relative position of the edges of the screen and the eyes. In terms of the depth cues, one is looking at a 3D world through a window which the brain will automatically make the adjustment for minor distortions due to objects disappearing from one eye view of the two views of 3D.

110. Poor quality 3D content creates window violations which the brain cannot correct for which results in eye strain, dizziness and headaches. Consequently, a frame outline was used in 3D movies to offset the distortion created when objects moved out of view.





111. The Ultra-D Borders adjustment are both a user manual adjustment and an A.I. driven automatic adjustment which is designed to minimize edge distortions operating in conjunction with other A.I. operations stemming from the use of the diffractive / refractive optics of the 2D switchable lens which imposes a 3D pop off the screen limiter function.

112. These key Ultra-D advancements allow almost any 3D content to played on the screen without the artifacts that plague all other 3D auto stereoscopic platforms and are based on Rembrandt technology.

113. This Rembrandt enabled technology goes to the heart of the commercial value for the present technology as it allows and supports a consumer home, broadcast quality 3DTV mass market product.

114. The images below are screen shots of Ultra-D 3D content. Note the top and bottom Ad design incorporating visual edge borders where the factor is set lower than the center image and is therefore designed to amplify the 3D forward POP off the screen of the center objects.

115. These screen shots illustrate the use of the top and bottom borders as design elements of the 3D advertisement, in so far as they are set by the factor as being screen back, thereby amplifying the contrast of the screen forward pop off impact of the objects.

116. The Stream OSD Menu for the "liveliness" adjustment is an additional 3D content modification technique based on the manipulation of an additional algorithm which has been remastered to apply to a 3D segment as an ongoing upgraded 3D enabling adjustment.

117. This is another 3D content modification technique, providing an additional 3D image improvement. The following email from Barenbrug describes the application of the methodology which we defined using the term**: LIVELINESS** on the Ultra-D On-Screen Display, as seen below.

From: Bart Barenbrug <bart@c3d-vr.com>
Subject: Re: Avatar/ More/Steve
Date: January 20, 2010 at 2:42:44 PM EST
To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>
Cc: Grazzy <grazina@threecubes.com>

Reply-To: bart@c3d-vr.com

"Both of the 3d content modification techniques being described in the above by Barenbrug constitute applications of both User Manual, and AI scripted Automatic, methodologies for intervening with both the correction and optimization of the 3d image.

Begin forwarded message:

From: Bart Barenbrug <bart@c3d-vr.com> Date: January 20, 2010 2:42:44 PM EST

To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>
Cc: Grazzy <grazina@threecubes.com>

Subject: Re: Avatar/ More/Steve Reply-To: bart@c3d-vr.com

Hi Steve,

As soon as I read your email, I had to run back to the other computer and start the download,

The et version (short for etna), is the algorithm most like the approach from HD logix: several depth cues which are mixed, and post-processed (for temporal stabilization and depth map alignment). The sm version stands for slant+motion, which only uses a fixed slant (top of the image to the back, and the bottom to the front), and depth-from-motion, and then applies a regularization postprocessing. This one I think is the least effective.

"The fw version is the algorithm that is implemented in the firmware (the 8" and the conversion box). It is also based on a slant with post-processing, but implements it differently and has a "liveliness" parameter which can be adjusted to tune the amount of deviation from the slant. I'd like to see if a combination of this with motion would make for a better conversion version.

My favorite,

Bart

118. Given that Bart's description of the S-M algorithm (FW) operation is termed 'liveliness' in 2010 and the same terms appears on the Ultra-D On-Screen Display, and that the 3DASD appears to function consistently with the operation of the s-m (FW) slant motion software, the trade secret expressed by 3DFusion in 2010 can conclusively be stated to be the functionality found in the Stream product now.

II. Relative Value of the Philips and Rembrandt Technology

119. While negotiating the relative value of a fair settlement between Rembrandt and Stream, both parties referenced the cost of obtaining a non-exclusive license to the underlying Philips technology and the cash component of the license was set at a similar value.

120. Notably, the Philips technology was seriously flawed until I applied my technical improvements. Rembrandt has old Philips 3D sets and can provide demonstrations of how the Philips technology looked with and without Rembrandt's technical improvements and the knowhow and trade secrets licensed to Stream. Virtually any person, whether expert or casual user, viewing the images with and without Rembrandt's technology would agree that the Rembrandt technology allows a comfortable, commercially viable viewing experience that was not achieved by the Philips technology.

121. SeeCubic and Hawk are seeking to take Rembrandt's technology without similar compensation for the license. The harm to Rembrandt is simply stated as the value of the non-exclusive license which is at a minimum, $5,840,000 in cash, 2,000,000 warrants to purchase Stream stock, 100 4K TVs for no charge, 8 8K prototypes at no charge, and the right to purchase 3,015,000 8K 3DASD LCD units at cost.

122. Rembrandt-Delaware previously purchased a Stream TV for $5,250, so it is estimated the value of the no charge TVs and the 8K prototypes to be about $567,000.

123. Notably, the value of the no charge units and the expected value of the at cost units came directly from Shadron Stastney while he was CFO of Stream. Mr. Stastney during various settlement meetings that the Stream margins would be about $400/unit during early commercial scale production and then drop to as low as $120/unit during very high volume production in later years

124. Based on Shadron Stastney's statements during mediation, the ability to purchase 3,015,000 units at cost was worth approximately $400/unit x 3,015,000 units = $1,206,000,000 at the high end and $120/unit x 3,015,000 units = $361,800,000 at the low end.

125. Plaintiff Rembrandt 3D Holding Ltd. ("Rembrandt" or "Plaintiff") is the successor-in-interest to 3DFusion Corp. ("3DFusion"), the original owner of the improved Philip's 3DASD technology (or glasses-free 3D autostereoscopic display technology).

SeeCubic and Hawk

126. All parties can likely agree that the collective Philips, Rembrandt, and UltraD technology is worth many hundreds of millions of dollars.

127. The license from Rembrandt to Stream is not assignable to a purchaser of the assets of Stream.

128. The Philips license is also not transferable in an asset sale.

129. Even assuming that Stream made many additional improvements in creating the UltraD technology, UltraD is completely dependent upon the underlying Philips and Rembrandt technology. Failing to obtain a license from Philips and Rembrandt will render the transfer of any Stream or Technovative assets effectively worthless.

130. If instead of selling the assets of Stream, the trustee pursued a sale of new shares in Stream directly, the value of the technology would be maintained and the licenses with both Philips and Rembrandt would still be valid.

Pursuant to 28 U.S.C. section 1746, I declare under penalty of perjury of the laws of the United States of America that the foregoing is true and correct.

/s/ Stephen Blumenthal

Dated: ***November 6, 2024***

Stephen Blumenthal
Manager – Rembrandt 3D Holding Ltd.

Exhibit List:

Exhibit 1	First Amended Complaint and exhibits
Exhibit 2	April 9, 2019 Term Sheet initialed by Shad Stastney
Exhibit 3	Mr. Michaels email to Stream's bankruptcy counsel on April 20, 2021
Exhibit 4	Mr. Michaels email to the counsel for creditors of Stream on April 20, 2021
Exhibit 5	Mr. Michaels email to the counsel for SeeCubic on April 20, 2021
Exhibit 6	Settlement agreement between Stream and Rembrandt-Holding on May 23, 2021
Exhibit 7	Philips license to 3D Fusion.
Exhibit 8	Declaration of Stephen Blumenthal - Reply to motion to dismiss bankruptcy
Exhibit 9	Declaration of Christopher Michaels -Reply to motion to dismiss bankruptcy
Exhibit 10	Redacted list of trade secrets with list of documentary evidence supporting the proof of development of the trade secret

EFiled: Oct 21 2022 02:41PM EDT
Transaction ID 68288444
Case No. 2020-0766-JTL

EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

REMBRANDT 3D HOLDING LTD Plaintiff, v. STREAM TV NETWORKS, INC., MATHU RAJAN, and RAJA RAJAN Defendants.	§ § § § § § §	C.A. No. No. 17-CV-882 (RA) **First Amended Complaint** **1. Patent Infringement** **2. Breach of Contract** **3. Promissory Estoppel** **4. Unjust Enrichment** **Jury Trial Demanded**

FIRST AMENDED COMPLAINT

Plaintiff Rembrandt 3D Holding Ltd ("R3D" or "Plaintiff'), by and through their counsel and for their Complaint against Stream TV Networks, Inc. ("Stream"), Mathu Rajan, and Raja Rajan (collectively, "Defendants"), hereby allege as follows:

PARTIES

1. Plaintiff is a corporation organized and existing under the laws of the Island of Nevis with its principal office at 128 Bull Hill Road, Newfield, NY and a registered address at Suites 5 & 6 Horsfords Business Centre, Long Point Road, Charlestown, Nevis, West Indies. Plaintiff is the owner of all or substantially all of the assets including all causes of actions of 3DFusion Corp. ("3DFusion"), a Delaware corporation formed on March 26, 2007 with its principal office at 110 Wall Street, New York, NY, and its wholly owned Dutch subsidiaries 3DFusion Holding B.V. ("3DFusion Holding") and 3DFusion EU B.V. ("3DFusion EU") in Eindhoven, Netherlands.

2. Upon information and belief, Defendant Stream TV Networks, Inc. ("Stream") is a corporation organized and existing under the laws of the State of Delaware with its principal place of business at 2009 Chestnut Street, Philadelphia, PA 19103.

3. Upon information and belief, Defendant Mathu Rajan is the Chief Executive Officer of Stream and a citizen of Pennsylvania.

4. Upon information and belief, Defendant Raja Rajan is the General Counsel and Chief Operations Officer of Stream and a citizen of Pennsylvania.

JURISDICTION AND VENUE

5. This Court has subject matter jurisdiction over R3D's claims for patent infringement under the patent laws of the United States, Title 35 of the United States Code, and 28 U.S.C. §§ 1331 and 1338(a), diversity jurisdiction under 28 U.S.C. §1332, and supplemental jurisdiction over state law claims alleged in this Complaint under 28 U.S.C. §1367.

6. This Court has diversity jurisdiction under 28 U.S.C. §1332 because complete diversity of citizenship exists in the parties and the matter in controversy exceeds the sum or value of $75,000.00.

7. This Court has personal jurisdiction over Defendant Stream because, among other reasons, Defendant Stream expressly consented to the jurisdiction of the state and federal courts located in the City of New York under an agreement with Plaintiff's predecessor-in-interest, 3DFusion, dated June 9, 2010.

8. This Court has specific jurisdiction over Defendants Mathu Rajan and Raja Rajan under NYCPLR §302 (a)(1) because they transacted business within the State of New York, and the exercise of jurisdiction over Defendants Mathu Rajan and Raja Rajan would not offend traditional notions of fair play and substantial justice because of their numerous business trips and meetings at 3DFusion's New York City office as described in greater details below.

9. Venue is proper in this District under 28 U.S.C. §§ 1391 (b)-(c) because Defendants are subject to personal jurisdiction in this district.

INTRODUCTION

10. This is an action for (i) patent infringement relating to glasses-free 3D display technology, also known as 3D autostereoscopic display (3DASD) technology, and (ii) breach of express and/or implied contracts relating to merger/acquisition and unauthorized use of confidential and proprietary information of Plaintiff's predecessor in interest, 3DFusion Corp. ("3DFusion"), a pioneer startup on 3DASD technology. Plaintiff believes Defendants' breach of express and/or implied contractual obligations through their misappropriation of proprietary technology, expertise, and assets from 3DFusion, unjustly enriched Defendants Stream TV Networks, Inc. ("Stream"), Mathu Rajan, and Raja Rajan. Under the guise of a proposed merger/acquisition, Stream, which had no assets or expertise in 3DASD technology prior to its contractual relationships with 3DFusion, misappropriated 3DFusion's confidential and proprietary information during the due diligence process, and thereby avoided the risk, time, and expense of developing its own 3DASD technology. Stream's calculated and willful breach of promises and obligations unfairly benefitted Stream, which became a market leader on 3DASD technology within a year of its notice of termination of contractual relationship with 3DFusion, to the detriment of 3DFusion.

11. 3DFusion, a Delaware corporation with its principal office at 110 Wall St., New York, NY, was co-founded by Mr. Stephen Blumenthal ("Blumenthal") and Mr. Ilya

Sorokin ("Sorokin") in 2007, to create and sell 3D video content that can be viewed without 3D glasses. Philips offered a Glasses-Free three-dimensional (3D) autostereoscopic display ("3DASD") solution known as the WOWvx Platform for converting and generating 3D content from two-dimensional (2D) media content for rendering on Philips's 3DASD monitors. The WOWvx Platform uses mathematical algorithms to add depth and stereoscopic information to 2D content (i.e., 2D+Depth) thereby creating 3DASD content. However, Philips's 3DASD solution suffered from significant image quality issues because the 3DASD content generated by the WOWvx Platform contained numerous artifacts such as ghosting and required weeks of manual post-processing to correct. Nonetheless, 3DFusion licensed the WOWvx Platform from Philips.

12. Through extensive experimentation and research comprising more than 3000 hours of 2D-to-3D-depth-map rotoscoping, Blumenthal developed a novel and non-obvious methodology to correct the image quality issues or artifacts in the 3DASD content generated by the Philips's WOWvx Platform. Blumenthal assigned to 3DFusion ownership of his solution to heretofore unsolved problems of Philips's incomplete 3DASD technology, and filed a patent application in 2008 for the technical breakthrough, from which US patents issued as described below.

The Patents

13. Plaintiff is the owner by assignment of U.S. Patent No. 8,558,830 ("the '830 patent"), U.S. Patent No. 9,521,390 ("the '390 patent"), U.S. Patent No. 9,681,114 ("the '114 patent"), and other tangible and intangible assets of 3DFusion.

14. The '830 patent is entitled "System and Method For Adaptive Scalable Dynamic Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering, And Other Advantageous Processing of Three Dimensional Media Content," filed on December 18, 2009 claiming a priority date of December 18, 2008, and issued on October 15, 2013. A true and correct copy of the '830 patent is attached hereto as Exhibit A.

15. The '390 patent is entitled "System and Method For Adaptive Scalable Dynamic Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering, And Other Advantageous Processing of Three Dimensional Media Content," filed on October 15, 2013 claiming a priority date of December 18, 2008, and issued on December 13, 2016. A true and correct copy of the '390 patent is attached hereto as Exhibit B.

16. The '114 patent is entitled "System and Method For Adaptive Scalable Dynamic Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering, And Other Advantageous Processing of Three Dimensional Media Content," filed on December 2, 2016 claiming a priority date of December 18, 2008, and to be issued on

June 17, 2017. It is a continuation of the '390 patent. A copy of the'114 patent is attached hereto as Exhibit C.

17. Display technologies for 3D content media have evolved from the earliest offerings requiring the audience to wear flimsy "glasses" having a different (red or blue) lens for each eye, to more advanced electronic "stereoscopic 3D" glasses equipped with remotely triggered liquid crystal display (LCD)-based lenses (acting as individually alternating "shutters"), which provided its wearers with an engaging and quality '3D experience," given properly prepared 3D content media and appropriate playback and display technologies. However, this approach for providing a "3D experience" is quite cumbersome and very expensive to use and maintain, and has thus been of very limited commercial success, primarily being relegated to special entertainment venues, such as IMAX theaters and high-end amusement parks. See 1:39-63 of U.S. Patent No. 8,558,830; 1:64-2:22 of U.S. Patent No. 9,521,390.

18. At the time the inventions in U.S. Patent Nos. 8,558,830 ("the '830 patent"), 9,521,390 ("the '390 patent"), and 9,681,114 ("the '114 patent") were conceived, there were a number of companies that developed and offered flat panel displays of varying sizes capable of creating a virtual 3D experience for the viewer without the need for the viewer to wear electronic or other types glasses or similar devices. However, the quality and impact of the 3D experience delivered by the available stand-alone 3D (SA-3D) solutions is lower

than that of conventional high-end glasses-based stereoscopic 3D offerings. See 2:5-19 of the '830 patent; 2:31-46 of the '390 patent.

19. To solve the aforementioned problems associated with glasses-free 3D systems, each of the '830 patent and the '390 patent discloses embodiments that "advantageously enable automatic, semi-automatic or user-controlled selective performance of 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure (from 3D content capture, to 3D content processing (and/or 2D to 3D content conversion), and to 3D content media display), and in at least one embodiment thereof, the inventive system and method are capable of determining and implementing selective or optimal storage, transmittal, and application of 3D content processing/settings/parameter/profile configuration(s) prior to, or during, display of corresponding 3D content media to one or more viewers thereof." See 3:49-60 of the '830 patent; 4:17-29 of the '390 patent.

Background

20. Upon information and belief, Koninklijke Philips Electronics N.V. ("Philips"), a Dutch corporation having its registered office in Eindhoven, Netherlands, through its wholly owned subsidiary, 3DSolutions ("3DSolutions"), began pursuing the concept of developing 3D glasses free television in the early 2000's, based on the 2D+Depth, 3D autostereoscopic mathematical encryption technology of the Heinrick Hertz Institute.

21. Upon information and belief, Philips expended approximately a half a billion dollars for the development of glasses-free 3-dimensional television, otherwise known as 3D Auto Stereoscopic Display (3DASD) No Glasses television platform.

22. In 2007, 3DFusion became a licensed vendor of Philips Electronics Nederland B.V. for converting 2D video content into 3D Autostereo Display ("3DASD") video content using Philips's tools and products including the WOWvx platform and "Blue Box" hardware and software. 3DFusion paid Philips approximately $7,000.00 per month for this license arrangement.

Limitations of Philips's 3DASD Technology

23. Philips made tremendous progress in the development of three dimensional glasses free (i.e. 3DASD) television; however, their products had some limitations and problems with artifacts, clarity and image quality.

24. Blumenthal began converting, correcting and optimizing 2D videos into Philips's 3D formatted videos (i.e. 2D+Depth) for 3DASD displays using Phillips's 3DASD content generation tools including its WOWvx platform and the Bluebox.

25. Blumenthal, through 3DFusion, was one of a very small group of vendors allowed to work with the Philips products and tools.

26. At that point in the Philips development effort, Philips did not provide an efficient solution to the problem of artifacts in the converted 2D+Depth video created by the Philips tools, which would enable users to, for example, adjust, correct, or optimize different

subsets of 3D images of the video. Rather, Philips tools could only provide fixed or preset parameters for the entire video.

27. Consequently, the 2D+Depth video (i.e., 3DTV No Glasses), as displayed on the Philips 3DASD TV, demonstrated the same ghosting, eye strain, dizzying artifacts that plagued the 3DTV with Glasses consumer market.

28. At the same time that Philips was working on 3DASD television technology, others in the industry working on this technology also experienced the same problems of ghosting, eye strain, and dizzying artifacts.

29. Philips's 2D to 3D conversion and playback process was a prohibitively expensive, slow, complicated, and highly labor intensive effort to get to a usable 3DASD video content.

<u>3DFusion's Improved 3DASD Technology</u>

30. Over thousands of hours of creating 2D+Depth videos using Philips's tools and products, Blumenthal recognized that certain subsets of images had to be adjusted to achieve appropriate broadcast quality 3D images. Blumenthal discovered a methodology for efficiently converting, correcting and optimizing a 2D+Depth video that overcame the problems of the preset manual process associated with the Philips tools. Blumenthal's discovery was treated as a proprietary technology of 3DFusion, and which includes trade secrets and patentable inventions. Great efforts were taken to protect the proprietary technology and to ensure nondisclosure of such technology.

31. In 2008, Stephen Blumenthal filed a U.S. Provisional Patent Application and in 2009 filed a regular utility U.S. Patent Application, which issued in October 2013 as the '830 patent. The '830 patent and the later issued patents including the '390 patent sit at a key junction of the Philips 3DASD hardware and software 2D+Depth platform and elevate the flawed Philips platform to a previously unachievable standard for 3DTV broadcast quality. This development enabled or otherwise positioned the Philips 3DTV to be utilized as a seamless replacement for all 2D video commercial applications and markets. Moreover, the techniques and advancements created by Blumenthal are applicable across the industry where these issues have been plaguing the advancement of the technology.

Philips Discontinued Its 3DASD Manufacturing and Support

32. In August of 2009, Philips notified 3DFusion that it was in the process of winding down its incubator 3DSolutions because it was unable to solve the aforementioned 3D image artifacts. However 3DFusion could continue to use the previously licensed hardware and software under its arrangement with 3DSolutions because Philips recognized that 3DFusion, through its proprietary technology, could continue to advance Philips's products and tools including the WOWvx platform. .

33. In or about September 2009, upon the shutdown of 3DSolutions, which manufactured the 3DASD monitors and developer of the supporting software (e.g. the WOWvx platform), Blumenthal, acting on behalf of 3DFusion, immediately contacted the former 3DSolutions' key technology experts (the "Team") to join 3DFusion as part of an

effort to re-establish support for the WOWvx platform that had been provided by the now defunct 3DSolutions, and to engage the Team in Eindhoven, Netherlands, through a wholly owned Dutch subsidiary of 3DFusion. The Team included Walther Roelen ("Roelen") a former 3DSolutions 3DTV lens designer and Bart Barenbrug ("Barenbrug") a former 3DSolutions senior software engineer, both of whom are Dutch residents.

34. For convenience sake, the Dutch subsidiary was named "C3D" prior to its corporate formation. The name "C3D" was later changed to "3DFusion EU" as indicated in an email dated March 15, 2010 from Walther Roelen.

35. In or about September 2009, Blumenthal requested a number of documents from Barenbrug and Roelen relating to the software technology, manufacturing infrastructure, and real estate required for starting up the Dutch subsidiary. Towards that end, 3DFusion gave Roelen a power of attorney to execute the requisite legal documents for the contemplated transactions.

36. Accordingly, Barenbrug, under Blumenthal's guidance and instructions, drafted confidential technical documents for purposes of identifying intellectual property critical for the contemplated license from Philips. Roelen also drafted documents for the startup infrastructure.

3DFusion Recruited Philips's 3DASD Technical Team

37. In December 2009, Blumenthal arrived at Eindhoven, Netherlands to negotiate a license with Philips to manufacture the Philips WOWvx platform and to use the

800+ patents, and to upgrade the Philips products and tools. At that time, Blumenthal also demonstrated 3DFusion's proprietary technology to the Team including Roelen and Barenbrug, all of whom orally agreed to keep 3DFusion's proprietary technology confidential. After the demonstration, one of the members of the Team, Ms. Grazina Seskeciuite, stated that "it took two guys from New York to come to Philips to show us how to fix our TV."

38. Later in this same month, 3DFusion engaged the Team, including Roelen and Barenbrug as independent contractors to support 3DFusion's efforts to restart manufacturing of Philips's 3DASD monitors and the WOWvx platform.

39. In January 2010, Blumenthal and the Team commenced bi-weekly teleconferences for starting up the new Dutch subsidiary, with meeting minutes (the "Minutes") recorded by Ms. Ann-Marie van Ham, a member of the Team. The meeting minutes show the various technical and administrative issues addressed by the Team including licensing issues with Philips and Blumenthal's proposed lens design for joint development with Corning Glass, all of which are deemed confidential and proprietary information of 3DFusion. See, e.g., Minutes of February 17, 2010,

40. Members of the Team understood the confidential nature of their relationship with 3DFusion, as illustrated by the Minutes, and by a series of emails in March 2010 between Roelen, van Ham, Seskeciutie and Blumenthal, reflecting their obligations to getting the 3DFusion NDA's signed by all Team members. The signing of the NDA's was

completed by a number of Team members, according to Ms. van Ham, but the signed NDAs were not collected or returned to Blumenthal until October 2010.

41. The Team acknowledged in numerous communications and as shown in the Minutes that they were working on behalf of 3DFusion to advance the 3DASD and the supporting software technology and marketability that Blumenthal had made possible through his breakthrough discoveries.

42. As a result of 3DFusion's proprietary technology, 3DFusion received the endorsement of the former 3DSolutions' senior technical team, who presented 3DFusion to Philips's Intellectual Property and Standards Division, (IP&S) and persuaded IP&S to accept 3DFusion's license application for the Philips's intellectual property relating to the WOWvx platform.

3DFusion Licensed Philips's 3DASD Technology For Over $5M

43. In December of 2009, 3DFusion entered into negotiations to acquire comprehensive archive of Philips's intellectual property for the 3DTV No Glasses/3DASD/2D+Depth technology platform. Blumenthal immediately entered into negotiations to license the $500 million dollar, Philips's 3DASD technology platform, which is referred to by the Defendant Stream TV as "video+depth".

44. 3DFusion was successful in formulating a deal with Philips giving 3DFusion the right to the nonexclusive use of Philips technology.

45. In May 1, 2010, Philips and 3DFusion entered into a license agreement ("License Agreement") for the WOWvx platform and became the first developer to be granted unprecedented rights to, among other things, use, sell or offer to sell various licensed products and to make *derivative works* of the licensed software and to license and distribute licensed technology including Philips's 2D+Depth technology, 800 Approved 3DTV Patents, source code, and associated hardware and software platform. See Section 2 of the License Agreement, Exhibit D.

46. Under the License Agreement, 3DFusion was obligated to pay (i) $5M for delivery of Philips's Know-How and Licensed Software, of which 50% was payable within 45 days of execution of the License Agreement, with the remaining 50% due in 2011 and (ii) a minimum royalty of 100,000 Euros per year. See Exhibit D, Section 4 of the License Agreement.

3DFusion Sought Funding for the Dutch Team, the New Business Model and the Costly Philips License

47. Having secured Philips's intellectual property and key technology experts, 3DFusion proceeded to seek funding and/or financing for its expanded operations and liabilities required by the new business model.

48. In June of 2010, Raja and Mathu Rajan, as officers of Stream TV were introduced (hereinafter collectively "the Rajans") to 3DFusion as potential investors.

49. On June 9 of 2010, Raja Rajan and Mathu Rajan, principals of Stream TV Networks, Inc., came to 3DFusion's offices at 110 Wall Street, New York, NY to view a demonstration of 3DFusion's 3DASD technology. Raja Rajan was the general counsel and COO of Stream and his brother, Mathu Rajan, a technologist and the CEO of Stream. Upon information and belief, they were in communication with 3DSolutions, and had one of their screens. They were extremely frustrated with the 3D images as they were plagued with the same artifacts and ghosting issues that were prevalent in all of the Philips 3DTV's. When they saw the 3D content on 3DFusion 3DASD display, which was identical to theirs, they became instant believers.

50. At the initial June 9, 2010 meeting, the Rajans stated that they had purchased a Philips 3D TV platform and experienced the same 3D image quality failure as noted above. Upon viewing the 3DFusion's improved 3DASD tools and content on the same model of the Philips WOWvx platform that they owned, they became immediately convinced of the significance of the 3DFusion solution to the Philips 3DASD problem.

51. They indicated that the 3DFusion technology solved what was previously believed to be an unsolvable problem, and that this development would therefore provide them with a commercially viable 3D television product.

52. Based on this demonstration, the Rajans became very excited and immediately signed a Mutual Non-Disclosure and Confidentiality Agreement on June 9, 2010, and began equity funding negotiations, with the promise to provide $20 million in

funding. At this time, Stream, with no 3DASD technology of their own, was trying (as yet unsuccessfully) to develop a marketable glasses free 3D product. They realized that 3D Fusion's technology would make that possible.

53. The Rajans, acting as agents for Stream executed Non-Disclosure Agreements in June of 2010 (Exhibit E) and a MOU Term Sheet Agreement in September of 2010 (Exhibit F). In reliance of these agreements, 3DFusion provided Stream with information regarding all of the Confidential Information that had been developed by Blumenthal and the Team, including both the pathway to automation of the 3D content generation process, and the 3D playback optimization and correction process that had, prior to Blumenthal's ground breaking work, been impossible to solve. Blumenthal also disclosed, at Stream's insistence, relevant information about the Team and their roles and contact information.

54. Over the ensuing months, the parties, Blumenthal, the Rajans, Roelen, and Barenbrug, under the leadership and supervision of Blumenthal, all worked collaboratively towards the goal of pursuing glasses free 3D television technology.

55. In June 2010, 3DFusion and Defendant Stream TV Networks, Inc. entered into a Mutual Non-Disclosure and Confidentiality Agreement dated June 9, 2010 and an Addendum to Agreement dated June 11, 2010 for purposes of due diligence investigation and equity funding of 3DFusion (collectively referred to as the "Confidentiality Agreement") (Exhibit E). Thereafter, over a period of about four months, Raja Rajan and Mathu Rajan,

on behalf of Stream and/or on their individual capacities, held about six (6) to ten (10) face-to-face meetings with Blumenthal and Sorokin, and upon information and belief, about nine (9) more meetings with Sorokin, at 3DFusion's New York City office (i.e., at 110 Wall St.) relating to 3DFusion's Confidential Information and potential financing for 3DFusion.

3DFusion Formed and Began Operation of Dutch Subsidiaries

56. On September 17, 2010, 3D Fusion Corp. received registrations of two wholly owned Dutch subsidiaries. Specifically, 3DFusion Corp., the parent, owns 100% of 3D Fusion Holding B.V., a Dutch limited liability company, which in turn owns 100% of 3D Fusion EU B.V. a Dutch limited liability company (hereinafter collectively "the Corporate Entities"). In September Roelen was hired as the General Director (CEO) of the 3DFusion EU. BV., the Dutch subsidiary, and paid a Salary, with back pay to July 2010. Once the Dutch BV was established employment contracts were initiated.

57. 3DFusion established and funded bank accounts for its Dutch subsidiaries 3DFusion Holding B.V. and 3DFusion EU B.V. W. Roelen withdrew certain funds from both of these bank accounts ostensibly for salary payments for the Team from about June 2010 through February 2011 including the period prior to his appointment as Director at 3D Fusion EU B.V in September 2010, even though Roelen was not an officer of 3DFusion Holding B.V. Barenbrug attended various trade shows on behalf of 3D Fusion EU B.V. which paid for his trade shows related expenses and his equipment.

58. In October 2010, under Roelen's directions, 3DFusion EU hired its first full time employee, Ms. Grazina Seskeciuite, who was a graphic arts engineer and software developer, who had worked closely with Barenbrug at the former 3DSolutions, Roelen as the General Director with overall managerial responsibilities of the company, handled all confidential documents, had approved the Team's employment contracts template and was the Senior team organizer to whom the team looked to for guidance.

3DFusion Relied on Promises in a Term Sheet

59. On September 28, 2010, after about 4 months of negotiations, a Term Sheet (collectively, the "Term Sheet") was executed by Mathu Rajan (CEO of Stream) on behalf of Stream and in his individual capacity, by Raja Rajan (General Counsel and COO of Stream) in his individual capacity, by Sorokin on behalf of 3DFusion and in his individual capacity and Blumenthal, in his individual capacity. The Term Sheet memorialized their agreement for a contemplated 20 million dollar equity funding transaction. See Exhibit F.

60. Upon information and belief, the Term Sheet was prepared and drafted by Raja Rajan.

61. The Term Sheet states:

> The Parties agree, in full consideration of the time and expense that shall be expended by each party, to be bound by the transaction outlined in this Agreement and attachments hereto (hereinafter, the "Transaction") *upon execution of definitive agreements* comprising customary terms and conditions including the material terms and

> conditions in this Agreement and attachments thereto. (emphasis added)

62. Notably, no definitive agreements, as contemplated by the Term Sheet, were executed by the parties. Thus, by its terms, the Term Sheet is not a valid or enforceable contract.

63. Pursuant to the "Capitalization Strategy" section thereof:

> Stream intends to become an operating subsidiary of a holding company ("HoldCo") that may be newly-formed. It is understood that all the rights and obligations herein granted to Stream shall be fully assignable to and assumable by Holdco. It is intended that [3D]Fusion (or all its assets in a newly-formed entity) shall become a separate subsidiary of HoldCo jointly owned by HoldCo and the current owners of [3D]Fusion ("3D Sub"). [3D]Fusion shall have representation at HoldCo Board Level if the Strategic Option below is exercised.
>
> Stream agrees that it will keep [3D]Fusion informed of the capitalization efforts as the process commences.

64. Pursuant to "Ownership Structure" section thereof:

> The 3D Sub shall commence with 100% of it being owned by Fusion Founders. HoldCo may provide funds to commence operations within the 3D Sub ("Start Up Funds") up to $5,000,000 in total. The Start Up funds may be in tranches if mutually agreed upon in writing when the Parties complete their financial projections.
>
> Subsequently, HoldCo shall have the right at its discretion to contribute funds earmarked for growth in 3D Sub or any mutually agreed upon spin off company designed to commercialize an opportunity developed by 3D Sub ("Growth Funds").

65. Pursuant to "Duration Restrictions" section thereof:

> *The Parties agree that they shall fully cooperate with each other and provide best efforts in working towards a closing of the transaction described herein.* For all the good and valuable consideration

> described herein and the costs and expenses that have been and will be incurred by each party, the Parties agree they shall not shop for or seek any alternative financing or capitalization except for that which is described herein *for a period of ninety days from completion of the Closing Deliverables (defined below)and consent to the final Definitive Agreements (mentioned above). If a closing has not occurred within that time period then the obligations herein expire except for those relating to confidentiality*. (emphasis added)

66. Thus, the Term Sheet does not expire or terminate unless these conditions are satisfied: (1) completion of the Closing Deliverables and (2) consent to the final Definitive Agreements.

67. Thereafter, parties to the Term Sheet conducted due diligence and, as a result, Stream, Mathu Rajan, and Raja Rajan gained valuable insight into the operations, business plans, financial goals, trade secrets, technical know-how, patent applications, licensed software and hardware from Philips, the confidential terms and conditions of the Philips License Agreement, and the identities of the members of the Team (including Roelen and Barenbrug) in Eindhoven, Netherlands, all of which constitute Confidential Information of 3DFusion.

68. On October 8, 2010, Blumenthal visited Stream's office in Philadelphia, Pennsylvania during which meeting he answered questions from Raja Rajan and Mathu Rajan and other employees of Stream (including Mr. Suby Joseph, the CFO of Stream) about 3DFusion's business plans and startup strategy and demonstrated 3DFusion's proprietary technology using 3DFusion's equipment loaded with 3DFusion's proprietary software. Blumenthal went through all aspects of the workflow, of conversion, of

optimization and correction of the artifacts in the 3DASD video content. Blumenthal also explained how the lens design for the 3DASD monitors was critical to matching the content to, and went over the 2d switchable technology. This meeting lasted about 9 hours and Stream videotaped the entire 8-hour work session. At the end of the meeting, Mathu Rajan said to Blumenthal "Now I can do what you do. What do I need you for?"

69. On October 27, 2010, at a 3D Technology conference (i.e., the Kagan 3D Technology Conference) at Waldorf Astoria hotel in New York City, Blumenthal was seated on the same panel as Mr. Jeffrey Katzenberg of DreamWorks, Mr. John Landau of Lucas Films, and other video pioneers discussing 3DASD technology. After the panel discussion, Mathu Rajan walked up to Blumenthal and Sorkin and said that he's not sure if Philips's and 3DFusion's technology is worthwhile.

Stream and Rajans Deemed the Term Sheet Enforceable And Termination Is Effective Only Upon Execution of a Mutual Termination Agreement

70. Even though the Term Sheet is not valid or effective as a contract by its terms, 3DFusion justifiably relied on the promises made in the Term Sheet because the parties deemed the promises in the Term Sheet enforceable or otherwise binding.

71. Indeed, on or about January 5, 2011, 3DFusion received a "Termination Agreement" dated January 5, 2011 and signed by Mathu Rajan on behalf of Stream and in his individual capacity, and Raja Rajan in his individual capacity contending that the Term Sheet is binding and that 3DFusion breached a clause in the Term Sheet. See Exhibit F.

72. The "Termination Agreement" contended that 3DFusion breached the Term Sheet by "enter[ing] into a relationship with a third party whereby they have obtained capital to further their business" "but any continuing express obligations that may exist under the NDAs shall continue as provided in those documents." See Section 1 of proposed "Termination Agreement," Exhibit G. The alleged breach referred to 3DFusion's borrowing of $350K (the "Note") from a lender (the "Lender") to pay the Philips License fee due in December 2010, which liability was expressly acknowledged in the Term Sheet. 3DFusion would not have needed to borrow from a third party but for Stream's failure to "fully cooperate" with 3DFusion and to use "best efforts" to complete the transaction contemplated in the Term Sheet to provide the promised funding to 3DFusion to pay for Philip's license fees and the Team's salaries. Rather, Stream would require 3DFusion to default on the Philips license and lose one of its valuable assets.

73. The "Termination Agreement" proposed by Stream/Rajans further included a mutual general release relating to "any oral or written discussion by each member of Parties including but not limited to Prior Agreements." See Section 3 of "Termination Agreement", Exhibit G.

74. In any event, neither Sorokin nor Blumenthal signed the "Termination Agreement."

75. 3DFusion did not breach the Term Sheet because it timely provided the "Closing Deliverables" to Stream. On the other hand, Stream, Mathu Rajan, and Raja Rajan

have yet to discharge all of its contractual obligations in the Term Sheet including the formation of HoldCo and the drafting of the Definitive Agreements referenced in the Term Sheet. Importantly, Stream, Mathu Rajan, and Raja Rajan did not "fully cooperate with each other and provide best efforts in working towards a closing of the transaction described [in the Term Sheet]."

76. Plaintiff, as successor in interest of 3DFusion Corp., remains ready, willing, and able to complete the transaction contemplated in the Term Sheet.

77. In 2016, Blumenthal acquired all of the assets and interests including all causes of action of 3DFusion and its subsidiaries and in 2017, Blumenthal assigned such interests and causes of action to Rembrandt 3D Holding, Ltd, which is the plaintiff in this action, and wholly owned by Blumenthal.

<u>Roelen's Betrayal and Conspiracy with Stream/Rajans</u>

78. In or about the end of September 2010, Stream requested permission to speak with the Team. Roelen communicated 3DFusion's proprietary information to agents or affiliates of Stream.

79. Upon information and belief, Roelen and Stream's agents or affiliates misused and/or misappropriated 3DFusion's proprietary information and conspired with to the detriment of 3DFusion in breach of his fiduciary duties to 3DFusion. Roelen, as the

Director of 3DFusion EU, had the overall responsibility of getting the Team to sign employment contracts since June 2010. Notwithstanding Bart Barenbrug, a key technical team member, already approved his employment agreement in July 2010, Roelen continued to stall the process by making up excuses to repeatedly revise his employment agreement through November and December 2010. As a result, 3DFusion never received any signed employment agreement from the Team, and by the end of December 2010, the Team notified 3DFusion that the Team will not execute the employment agreements.

80. Upon information and belief, Raja Rajan and/or Mathu Rajan conspired with Roelen to stall the due diligence process in violation of his promise to "fully cooperate with each other and to provide best efforts in working towards a closing of the transactions described" in the Term Sheet. For example, on November 3, 2010, Raja Rajan emailed Blumenthal and Sorokin requesting financial information that Stream already received in August 2010 and acknowledged in the Term Sheet (dated September 28, 2010), and employment contracts for Blumenthal and Sorokin that Stream already promised will draft to incorporate terms specified in the Term Sheet.

81. In any event, each of the Team members executed Non-Disclosure and Non-Circumvention Agreements ("NDA") with 3DFusion on or about October 4-6, 2010.

82. But Roelen inserted a clause in his NDA stating that the NDA "will be terminated if on January first of 2011 there is no employment contract or other similar agreement between any of the 3DFsuion [sic] companies and recipient." Only one other

member of the Team, Mr. Hans Zuidema inserted a similar clause in his NDA. Mr. Hans Zuidema is presently, the Chief Technology Officer and General Manager of SeeCubic, Stream's European subsidiary.

83. Even though it was Roelen's responsibility to have the Team execute the employment agreements since June 2010, Roelen failed to disclose to Sorokin or Blumenthal why he and Zuidema alone require their NDAs to expire by the end of December 2010, when the other team members did not.

84. Soon after Roelen's and Zuidema's NDAs were terminated upon their expiration dates, Stream emailed 3DFusion the proposed "Termination Agreement."

Confidential Information

85. Blumenthal treated the License agreement with Philips and the information acquired thereunder including, without limitation, derivative works as protected proprietary and/or confidential information, which he had worked very hard to develop and only disclosed the licensing terms and protected information on a need-to-know basis, and only under protection of nondisclosure agreements.

86. The research and development effort by Blumenthal and the Team produced valuable confidential and proprietary information ("Confidential Information") including the derivative works developed under the Philips Technology License trade secrets, patents and patent applications, and copyrights, which became the essential technology components for an improved and commercially marketable WOWvx platform.

87. The Confidential Information was disclosed to Stream pursuant to the Confidentiality Agreement signed June 9, 2010 and June 11, 2010 and the Term Sheet signed September 28, 2010.

88. Blumenthal through the 3DFusion corporate entities and the Team continued the process of developing bridge software programs (e.g. derivative works of the Philips licensed software) and technology that would allow for the Philips platform to be successfully commercialized with an automatic conversion process, and a playback optimization and correction process.

89. The following documents further demonstrate that Roelen was working on behalf of 3D Fusion and that all technology developed was the property of 3D Fusion: Minutes of 3D Fusion team meetings such as, for example those dated January 26, 2010, February 3, 2010, February 10, 2010, February 17, 2010, February 24, 2010, March 13, 2010, March 18, March 25, April 7, April 14, April 21, April 28, May 12, June 2, June 9 show Walther Roelen at these meetings in which the business progress and technology work were discussed and Roelen had "action points" that he was responsible to accomplish.

90. Email dated November 26, 2010 sent to Blumenthal from W. Roelen, with Barenbrug and Zuidema copies to which is attached a seventeen page memo listing thirty 3DFusion client projects, which had been transferred to 3DFusion EU from 3DFusion Corp. for the Team's development.

91. Email dated October 4, 2010 from W. Roelen stating that he is the head of 3D Fusion EU. He signed the email as Walther Roelen, CEO.

92. Under their NDAs Roelen and Barenbrug agree, among other things, that their obligations relating to Confidential Information shall survive termination and that the NDA shall be governed by the applicable laws of the State of New York, excluding its conflict of law provisions.

93. Notably, under their NDAs, Roelen and Barenbrug agree that the use of Confidential Information in the manufacture of any products and the filing of any patent applications containing the Confidential Information without the prior express written authorization of 3DFusion are specifically prohibited.

94. In addition to the Philips technology for which Blumenthal developed the bridge concepts, there were also lens design aspects of the 3D lenticular lens, which Blumenthal had been working on with Corning Incorporated based in Corning, New York, which were believed to be essential to the proper implementation of the product.

95. In late August, 2010, Blumenthal set a meeting for him and Roelen to meet with Corning Glass scientist and technical team on September 3, 2010, at the Corning, N.Y. headquarters.

96. Roelen arrived and stayed at a hotel in Trumansburg, NY from September 2 through September 4 during which period Blumenthal and Roelen discussed confidential

and proprietary information relating to 3DFusion and the formation and operation of the Dutch subsidiaries of 3DFusion.

97. An objective of the September 3 meeting at Corning was to share 3DFusion Intellectual Property and Trade Secret concepts with Corning and to explore Corning's ability to make certain improvements in the 2D switchable lens design and manufacturing. During the course of this meeting Blumenthal and Corning disclosed substantial Confidential Information to Roelen.

98. Upon and information and belief, subsequent to this meeting with Corning Glass, Roelen in violation of his agreement with and/or obligations owed to 3DFusion disclosed the Confidential Information to Stream who then utilized and /or incorporated the Confidential Information in their products and technology.

99. At this meeting Corning required Blumenthal to sign a Nondisclosure agreement on behalf of 3D Fusion and its officers, employees and representatives, which inured to the benefit of 3D Fusion and Corning.

100. At this meeting Roelen confirmed to Corning that he was the CEO of 3D Fusion EU, a wholly owned subsidiary of 3D Fusion.

101. After this initial Corning Glass meeting, Roelen had subsequent meetings to discuss this technology after he terminated his employment with 3D Fusion EU without the knowledge of Blumenthal in violation of the NDAs that Roelen was subject to. Roelen's

subsequent meetings in Corning, NY were a necessary and purposeful activity specifically related to Roelen's breach of confidentiality obligations owed to 3D Fusion.

Stream Had No Prior Knowledge or Expertise in 3DASD

102. Upon information and belief, the Rajans individually and through corporate entities, were players in the Bollywood, India movie industry, and had no 3DASD technology of their own.

103. Upon information and belief, Stream and the Rajans extracted the maximum amount of useful information and misappropriated Confidential Information from 3DFusion during the due diligence process including proprietary information obtained from the October 10, 2010 meeting in which Stream videotaped the Blumenthal's demonstration of 3DFusion's proprietary technology.

104. While Stream and the Rajans conducted their due diligence process, W. Roelen continued to act as the CEO of 3DFusion EU.

105. As a result of the due diligence process, Stream and Rajans gained valuable insight and knowledge of 3DFusion's proprietary and confidential information, which Defendant Stream used and continues to use in violation of the Confidentiality Agreement with 3DFusion.

106. 3DFusion placed their trust and confidence in Stream and Rajans by providing its proprietary equipment in order that they can demonstrate its proprietary technology to other potential investors.

107. Upon information and belief, Stream and Rajans used 3DFusion's proprietary equipment to attract and defraud investors by claiming the 3DFusion's technology as their own. Stream refused to return 3DFusion's proprietary equipment until April 2011, more than three months after Raja Rajan sent 3DFusion the "Termination Agreement" dated January 5 2011.

Discovery of Roelen's Betrayal, and Theft of 3DFusion's Proprietary Information By Stream and Rajans

108. 3DFusion subsequently learned that Director Roelen was acting to the detriment of 3DFusion EU and 3DFusion, in violation of his fiduciary and contractual duties to his employer 3DFusion and his confidentiality obligations under his NDA. Roelen understood that the information provided to him, or that was developed as derivative works of Philips's license technology, were all protected intellectual property and information of 3DFusion.

109. Upon information and belief, Roelen accepted an employment offer directly from Stream soon after the expiration of his NDA with 3DFusion, i.e., in or about January 2011.

110. Roelen continued to access and withdraw funds from 3DFusion Holding B.V. and 3DFusion EU B.V. until 3DFusion terminated his position of Director at 3DFusion EU B.V. in or about May 2011.

111. In or about January 2012, to his dismay, Blumenthal learned for the first time that Stream, Rajans, and W. Roelen had benefited from their violation of their NDAs and breach of their fiduciary responsibilities and contractual obligations to 3DFusion. While attending the Consumer Electronics Show ("CES") at Las Vegas, Nevada in January 2012, Blumenthal observed W. Roelen working at Stream's exhibit booth and representing himself as an employee of Stream, along with other former members of the 3DFusion EU technical team. The technology exhibited by Stream, Rajans, and W. Roelen at the CES show belonged to 3DFusion.

112. Upon information and belief, Walther Roelen is now the Technologist Strategist of SeeCubic B.V., the wholly owned Dutch subsidiary of Defendant Stream.

113. In or about January 2014, Raja Rajan on behalf of Stream, offered to sell and sold a 3DASD monitor to Blumenthal, which incorporates 3DFusion's confidential and proprietary technology.

114. Blumenthal also learned in or about 2017 that Roelen and Barenbrug filed a US patent application (Ser. No. 14/428,866) entitled "Depth Adjustment of an Image Overlay in a 3D Image" on March 17, 2015 claiming priority to a Dutch patent application (Ser. No. 2009616) with a filing date of Oct. 11, 2012, which applications disclose the Confidential Information in violation of their NDAs such as, for example, the border-blending and depth-smoothing functions or features described in at least paragraphs [0076], [0077], [0081], and

[0082] of the 14/428,866 application. See Exhibit H, U.S. Patent Application Publication No. US 2015/0249817 A1.

115. Upon information and belief, U.S. patent application 14/428,866 is owned by Stream's wholly owned subsidiary Ultra-D Coöperatief U.A. in Einhoven, Netherlands.

3DFusion – the Aftermath

116. In 2011, after the Team ended its relationship with 3DFusion, Blumenthal continued to guide 3DFusion and developed a new 3DASD media player, a derivate work developed under the Philips license. The 3DASD media player has been deployed and currently in commercial use.

117. In January 2012, Blumenthal resigned from 3DFusion due to lack of funding.

118. On Oct. 31, 2014, 3DFusion defaulted on the Note.

119. In or about February 2016, Blumenthal purchased all of the assets, tangible and intangible, from the Lender.

120. In or about December 2016, Blumenthal assigned all of the assets of 3DFusion to his newly formed holding company, Rembrandt 3D Holding, Ltd, i.e. the Plaintiff.

121. With this action, Plaintiff seeks to vindicate its rights, prevent any further infringement of its patents, preclude any further misuse of its confidential, proprietary, and trade secret information, and obtain compensation for damages suffered by 3DFusion and for Defendants' unjust enrichment resulting from their unlawful conduct.

Count I
Infringement of U.S. Patent No. 8,558,830
(Against Stream)

122. Plaintiff restates and realleges each of the allegations set forth above and incorporates them herein.

123. Upon information and belief, Defendant Stream makes, uses, sells, and/or offers for sale in the United States products and/or services for a system and method for selectively performing 3D content processing and/or settings/parameter configuration at one or more components of the system from 3D content capture to 3D content media display, including, for example, Defendant's Ultra-D technology (http://www.ultra-d.com/technology/) and Ultra-D enabled Monitor (http://www.ultra-d.com/televisions-and-more/) (collectively referred herein as the "Ultra-D System").

124. Defendant Stream discloses on its website (http://www.ultra-d.com/) that its "Ultra-D [system] is the only glasses-free 3D technology that delivers both a comfortable 'real life' viewing experience and content conversion capability."

125. According to Defendant Stream's white paper (http://www.ultra-d.com/wp-content/uploads/sites/2/2014/06/Ultra-D-technology-white-paper_07062013.pdf), the "Ultra-D technology for 3D displays has been developed to result in a natural 3D perception, where glasses are no longer needed. The Ultra-D technology generates a light-field addressing human depth perception in a way close to seeing the real three-dimensional

world. The Ultra-D optical solution addresses two important depth cues; stereopsis and (partial) motion parallax, resulting in a more natural 3D experience."

126. SeeCubic, a subsidiary of Defendant Stream(http://www.seecubic.com/rdi-center/) that "develops the hardware and services of the glasses-free 3D display technology called Ultra-D," discloses that the Ultra-D "technology can be applied in flat panel displays based products. Ranging from small displays as 4 inch to the largest mass-produced displays of 84 inch TVs. Components of the Ultra-D monitor and the seeCube™ convertor box are shown in the sketch [ ]. Rendering board, optical stack and optical glue are the parts produced by SeeCubic." (http://www.seecubic.com/technology/implementations/)

127. The "sketch" shown on SeeCubic's webpage (http://www.seecubic.com/technology/implementations/) shows that an Ultra-D Enabled Monitor ("UDEM") includes the following components: a power supply, an "Ultra-D rendering board," an audio board, an "Ultra-D conversion board," and a "3-D Module" comprising a "Tcon," a "2D open cell," and an "Ultra-D optical stack."

128. Upon information and belief, Defendant Stream discloses that "Ultra-D converts all content (even non-3D) in stunning detail, alleviating complaints of motion sickness, limited viewing angles and the need to be in a 'sweet spot' to see images in 3D. And Ultra-D puts viewers in control, with the ability to adjust 3D "pop" and depth to their liking. A room full of people can simultaneously experience Ultra-D's vibrant no-glasses-required 3D." (See http://www.ultra-d.com/)

129. Upon information and belief, "[t]he Ultra-D Format includes a separate depth signal next to the regular video signal extended with meta-data. Therefore, it is an 'image+depth-based' 3D format. Main characteristics: [a] The format is built upon widely available video coding and distribution standards. Therefore, the format leverages standard content distribution infrastructure, both at the broadcaster and at the receiver end. Hence, investments in existing infrastructure are retained. [b] The format is independent of particular 3D optics and other display properties. In other words: the format is display-agnostic, which decouples the content from display characteristics and hardware generation. Therefore, the format is suitable for content creation, distribution and conversion at the end-user. [c] The format requires very limited additional bandwidth compared to regular 2D signals. Therefore, the Ultra-D format is suitable as distribution format against minimal additional cost. [d] The format enables adjusting of depth range by the end-user, so it is adaptable to personal preferences. [e] The format can be generated from many difference sources, so it facilitates use of legacy 2D video formats, '3D' stereoscopic formats, etc." (http://www.seecubic.com/technology/ultra-d-format/)

130. Based on the Defendant Stream's above disclosures, the Ultra-D System is a data processing system for improving the efficiency, quality, viewing comfort and/or visual impact of a 3D experience capable of being provided to at least one viewer of a 3D content media comprising a plurality of content sections, in conjunction with the use of at least a

portion of a plurality of predetermined 3d content modification techniques as recited in Claim 1 of the '830 patent.

131. Upon information and belief, Defendant Stream licenses its technology to a third party, IZON TV Technologies, LLC ("IZON") having an office at 2005 Tree Fork Ln Unit 109, Longwood, FL 32750.

132. Defendant Stream publishes a press release on its website movebeyond3d.com disclosing "IZON a Florida-based display and content services provider, has been collaborating and working closely with Stream TV Networks to develop a superior visual experience for the commercial signage market and future products for consumers." (See press release at http://movebeyond3d.com/izon-tv-begins-pre-orders-for-glasses-free-3d-product-launch/)

133. Upon information and belief, IZON sells commercial displays and mobile devices incorporating the Ultra-D technology through its e-commerce website. (See, e.g., http://www.izontv.com/category-s/100.htm and http://www.izontv.com/category-s/101.htm)

134. Upon information and belief, the Ultra-D technology incorporated in the UDEM or other display devices directly infringes at least Claim 1 of the '830 patent by performing all of the steps of the claimed method.

135. Upon information and belief, the UDEM provides an on-screen-display (OSD) menu that allows an operator to identify a content section comprising a 3D media element and to select one or more 3D content modification techniques such as "3D Factor," "3D

Offset" and "Borders" tools for the operator to improve the 3D media element thereby meeting the limitations of step (a) of Claim 1.

136. Upon information and belief, the UDEM OSD allows the operator to apply the selected 3D content modification technique to improve the 3D media element thereby meeting the limitations of step (b) of Claim 1.

137. Upon information and belief, the UDEM OSD allows the operator to determine a setting for at least one parameter (e.g. 62%) of the selected 3D content modification technique ("Borders") optimal for the 3D media element in future application frames thereby meeting the limitations of step (c) of Claim 1.

138. Upon information and belief, the UDEM OSD allows the operator to associate a reference to the selected 3D content modification technique (e.g. "Borders") and the determined setting (e.g. 62%) with the 3D media element in future application frames thereby meeting the limitations of step (d) of Claim 1.

139. Upon information and belief, the UDEM OSD allows the operator to selectively repeat the above steps for an additional section of the 3D content media.

140. Upon information and belief, the UDEM OSD allows the operator to view in real time results of the above steps and to: selectively cancel at least one result of at least one operation of the previously performed steps and/or selectively change at least one operation previously performed at the above steps to an alternate operation.

141. Upon information and belief, the UDEM, after the above steps, generates a file configured for playback to a viewer and applies the selected 3D content modification technique to the 3D media element using the optimal parameter, and further configured to store for each 3D media element, the selected 3D content modification technique applied to each 3D media element and the associated reference to the future 3D content modification technique and the optimal parameter. The UDEM performs this step by, for example, including a separate depth signal next to the regular video signal extended with meta-data.

142. Upon information and belief, UDEM processes "all [media] content (even non-3D)." Accordingly, it meets all of the limitations of Claims 2 - 5. (See http://www.ultra-d.com/ and http://www.seecubic.com/technology/ultra-d-format/)

143. Upon information and belief, the UDEM meets all of the limitations of Claim 6 by including an OSD that allows manual control of one or more steps of Claim 1 by an operator.

144. Upon information and belief, Defendant Stream intended to induce patent infringement by third party vendors (e.g., IZON), customers and/or users of devices incorporating Ultra-D technology and had knowledge through Messrs. Mathu Rajan and Raja Rajan and other employees/officers of Defendant at least as early as of September 2010 that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement of the subject matter of the '830 patent as disclosed and claimed in its parent application filed in 2009. Defendant Stream specifically

intended and was aware that the normal and customary use of the accused products (e.g. UDEMs offered for sale by IZON) would infringe the subject matter of the '830 patent as disclosed and claimed in its parent application filed in 2009. Defendant performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the subject matter of the '830 patent as disclosed and claimed in its parent application filed in 2009 and with the knowledge, that the induced acts would constitute infringement.

145. Upon information and belief, Defendant Stream willfully infringed the '830 patent because it had knowledge of the subject matter of the '830 patent (as disclosed and claimed in its parent application filed in 2009) as early as 2010 and has continued to infringe the '830 patent to date. Defendant Stream's infringement constitutes egregious conduct because Defendant Stream engaged in infringing acts after terminating a confidential discussion to obtain a technology license in 2010 for the technology disclosed and claimed by the parent application of the '830 patent and misappropriating confidential and proprietary information received during the confidential discussion in 2010.

Count II
Infringement of U.S. Patent No. 9,521,390
(Against Stream)

146. R3D restates and realleges each of the allegations set forth above and incorporates them herein.

147. Upon information and belief, the Ultra-D technology incorporated in the UDEM or other display devices directly infringes at least Claim 1 of the '390 patent by performing all of the steps of the claimed method.

148. Upon information and belief, the UDEM provides an on-screen-display (OSD) menu that allows an operator to identify a content section comprising a 3D media element and to select one or more 3D content modification techniques such as "3D Factor," "3D Offset" and "Borders" tools for the operator to improve the 3D media element thereby meeting the limitations of step (a) of Claim 1.

149. Upon information and belief, the UDEM OSD allows the operator to apply the selected 3D content modification technique to improve the 3D media element thereby meeting the limitations of step (b) of Claim 1.

150. Upon information and belief, the UDEM OSD allows the operator to determine a setting for at least one parameter (e.g. 62%) of the selected 3D content modification technique ("Borders") optimal for the 3D media element in future application frames thereby meeting the limitations of step (c) of Claim 1.

151. Upon information and belief, the UDEM OSD allows the operator to associate a reference to the selected 3D content modification technique (e.g. "Borders") and the determined setting (e.g. 62%) with the 3D media element in future application frames thereby meeting the limitations of step (d) of Claim 1.

152. Upon information and belief, the UDEM OSD allows the operator to selectively repeat the above steps for an additional section of the 3D content media.

153. Upon information and belief, the UDEM OSD allows the operator to view in real time results of the above steps and to: selectively cancel at least one result of at least one operation of the previously performed steps and/or selectively change at least one operation previously performed at the above steps to an alternate operation.

154. Upon information and belief, the UDEM, after the above steps, generates a file configured for playback to a viewer and applies the selected 3D content modification technique to the 3D media element using the optimal parameter, and further configured to store for each 3D media element, the selected 3D content modification technique applied to each 3D media element and the associated reference to the future 3D content modification technique and the optimal parameter. The UDEM performs this step by, for example, including a separate depth signal next to the regular video signal extended with meta-data.

155. Upon information and belief, UDEM processes "all [media] content (even non-3D)." Accordingly, it meets all of the limitations of Claims 2 - 5. (See http://www.ultra-d.com/ and http://www.seecubic.com/technology/ultra-d-format/)

156. Upon information and belief, the UDEM meets all of the limitations of Claim 6 by including an OSD that allows manual control of one or more steps of Claim 1 by an operator.

157. Upon information and belief, Defendant Stream intended to induce patent infringement by third party vendors (e.g., IZON), customers and/or users of devices incorporating Ultra-D technology and had knowledge through Messrs. Mathu Rajan, Raja Rajan and other employees/officers of Defendant at least as early as of September 2010 that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement of the subject matter of the '390 patent (as disclosed and claimed in its parent application filed in 2009). Defendant specifically intended and was aware that the normal and customary use of the accused products (e.g. UDEMs offered for sale by IZON) would infringe the subject matter of the '390 patent (as disclosed and claimed in its parent application filed in 2009). Defendant performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the subject matter of the '390 patent (as disclosed and claimed in its parent application filed in 2009) and with the knowledge, that the induced acts would constitute infringement.

158. Upon information and belief, Defendant Stream willfully infringed the '390 patent because it had knowledge of the subject matter of the '390 patent (as disclosed and claimed in its parent application filed in 2009) as early as 2010 and has continued to infringe the '390 patent to date. Defendant Stream's infringement constitutes egregious conduct because Defendant Stream engaged in infringing acts after terminating a confidential discussion to obtain a technology license in 2010 for technology disclosed and claimed by

the parent application of the '390 patent and misappropriating confidential and proprietary information received during the confidential discussion in 2010.

Count III
Infringement of U.S. Patent No. 9,681,114
(Against Stream)

159. R3D restates and realleges each of the allegations set forth above and incorporates them herein.

160. Upon information and belief, the Ultra-D technology incorporated in the UDEM or other display devices directly infringes at least Claim 20 of the '114 patent by performing all of the steps of the claimed method.

161. Upon information and belief, the UDEM provides an on-screen-display (OSD) menu that allows an operator to identify a content section comprising a 3D media element and to select one or more 3D content modification techniques such as "3D Factor," "3D Offset" and "Borders" tools for the operator to improve the 3D media element thereby meeting the limitations of step (a) of Claim 20.

162. Upon information and belief, the UDEM OSD allows the operator to apply the selected 3D content modification technique to improve the 3D media element thereby meeting the limitations of step (b) of Claim 20.

163. Upon information and belief, the UDEM OSD allows the operator to determine a setting for at least one parameter (e.g. 62%) of the selected 3D content modification

technique ("Borders") optimal for the 3D media element in future application frames thereby meeting the limitations of step (c) of Claim 20.

164. Upon information and belief, the UDEM OSD allows the operator to associate a reference to the selected 3D content modification technique (e.g. "Borders") and the determined setting (e.g. 62%) with the 3D media element in future application frames thereby meeting the limitations of step (d) of Claim 20.

165. Upon information and belief, the UDEM OSD allows the operator to selectively repeat the above steps for an additional section of the 3D content media.

166. Upon information and belief, the UDEM OSD allows the operator to view in real time results of the above steps and to: selectively cancel at least one result of at least one operation of the previously performed steps and/or selectively change at least one operation previously performed at the above steps to an alternate operation.

167. Upon information and belief, the UDEM, after the above steps, generates a file configured for playback to a viewer and applies the selected 3D content modification technique to the 3D media element using the optimal parameter, and further configured to store for each 3D media element, the selected 3D content modification technique applied to each 3D media element and the associated reference to the future 3D content modification technique and the optimal parameter. The UDEM performs this step by, for example, including a separate depth signal next to the regular video signal extended with meta-data.

168. Upon information and belief, UDEM processes "all [media] content (even non-3D)." Accordingly, it meets all of the limitations of Claims 2 - 5. (See http://www.ultra-d.com/ and http://www.seecubic.com/technology/ultra-d-format/)

169. Upon information and belief, the UDEM meets all of the limitations of Claim 6 by including an OSD that allows manual control of one or more steps of Claim 20 by an operator.

170. Upon information and belief, Defendant Stream intended to induce patent infringement by third party vendors (e.g., IZON), customers and/or users of devices incorporating Ultra-D technology and had knowledge through Messrs. Mathu Rajan, Raja Rajan and other employees/officers of Defendant at least as early as of September 2010 that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement of the subject matter of the '114 patent (as disclosed and claimed in its parent application filed in 2009). Defendant specifically intended and was aware that the normal and customary use of the accused products (e.g. UDEMs offered for sale by IZON) would infringe the subject matter of the '114 patent (as disclosed and claimed in its parent application filed in 2009). Defendant performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the subject matter of the '114 patent (as disclosed and claimed in its parent application filed in 2009) and with the knowledge, that the induced acts would constitute infringement.

171. Upon information and belief, Defendant Stream willfully infringed the '114 patent because it had knowledge of the subject matter of the '114 patent (as disclosed and claimed in its parent application filed in 2009) as early as 2010 and has continued to infringe the '114 patent to date. Defendant Stream's infringement constitutes egregious conduct because Defendant Stream engaged in infringing acts after terminating a confidential discussion to obtain a technology license in 2010 for technology disclosed and claimed by the parent application of the '114 patent and misappropriating confidential and proprietary information received during the confidential discussion in 2010.

Count IV
Breach of Confidentiality Agreement
(Against Stream)

172. Plaintiff restates and realleges each of the allegations set forth above and incorporates them herein.

173. Defendant Stream has breached and continues to breach the Confidentiality Agreement by offering to sell and/or selling 3DASD related products and services incorporating 3DFusion's confidential and proprietary information.

174. Defendant Stream also breached the Confidentiality Agreement by disclosing 3DFusion's confidential and proprietary information in U.S. Patent Application Publication No. US 2015/0249817 A1 owned by Stream's wholly owned subsidiary Ultra-D Coöperatief U.A. (See Exhibit H)

175. Defendant Stream's breach of the Confidentiality Agreement is willful.

176. Plaintiff has been damaged as a consequence of Defendant Stream's breach of the Confidentiality Agreement in excess of $20 million, to be determined at trial.

Count V
Promissory Estoppel
(Against All Defendants)

177. Plaintiff restates and realleges each of the allegations set forth above and incorporates them herein.

178. Defendants induced 3DFusion to disclose all of their confidential and proprietary information by promising 3DFusion certain funding as described in the Term Sheet.

179. To its significant detriment, 3DFusion reasonably relied on Defendants' promises of funding as enforceable or binding as evidenced by Defendants' attempt to terminate the Term Sheet by requiring 3DFusion, Sorokin, and Blumenthal to sign the Termination Agreement.

180. As a consequence of 3DFusion's reasonable reliance on Defendants' promises, 3DFusion has been damaged in an amount in excess of $20 million, to be determined at trial.

Count VI
Unjust Enrichment
(Against All Defendants)

181. Plaintiff restates and realleges each of the allegations set forth above and incorporates them herein.

182. Defendants have been unjustly enriched by their misappropriation of 3DFusion's confidential and proprietary information and improper interference with 3DFusion's employment and economic relations with the Team in order to become a leader in 3DASD technology in less than year, without incurring the risks and costs of a startup, at the expense of 3DFusion.

183. Defendants in equity and in good conscience should pay to Plaintiff as a result of Defendants' unjust enrichment an amount in excess of $20 million, to be determined at trial.

DEMAND FOR TRIAL BY JURY

Plaintiff R3D demands a jury trial on all issues so triable, pursuant to Rule 38 of the Federal Rules of Civil Procedure.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff R3D prays for the following relief:

1. A declaration that Defendant Stream has infringed and are infringing one or more claims of each of U.S. Patent Nos. 8,558,830; 9,521,390; and 9,681,114 patents, and are liable to R3D for infringement under 35 USC §271(a);

2. A declaration that Defendant Stream's infringement of one or more claims of each of the '830, the '390, and the '114 patents has been willful;

3. A declaration that Defendant Stream has induced others to infringe one or more claims of each of the '830, the '390, and the '114 patents under 35 USC §271(b);

4. An order enjoining Defendant Stream from infringing one or more of claims of each of the '830, the '390, and the '114 patents;

5. If a permanent injunction is not granted, a judicial determination of the conditions for future infringement such as a royalty bearing compulsory license or such other relief as the Court deems appropriate;

6. An award of damages, including pre-judgment and post-judgment interest, in an amount adequate to compensate R3D for Defendant Stream's infringement of one or more claims of each of the'830 patent, the '390, and the '114 patents, and that the damages be trebled pursuant to 35 U.S.C. § 284;

7. A finding that this case is exceptional and an award of attorneys' fees pursuant to 35 U.S.C. § 285;

8. Award Plaintiff any and all damages sustained by 3DFusion, its predecessor-in-interest as a result of Stream's breach of Confidentiality Agreement described in Count IV;

9. Award Plaintiff any and all damages sustained by 3DFusion, its precedessor-in-interest, as a result of Defendants' inequitable conduct described in Counts V and VI.

10. A construct trust for the benefit of Plaintiff should be imposed on Defendants with regard to the confidential and proprietary information entrusted to Defendants by 3DFusion, in order to prevent unjust enrichment.

11. An award of attorney's fees, costs, expenses, and disbursements; and

12. Such other and further relief as the Court deems Plaintiff may be entitled to in law and equity.

Dated: June 23, 2017

Respectfully submitted,
/s/ Chi Eng
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Counsel for REMBRANDT 3D HOLDING LTD

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4375089

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
STEPHEN BLUMENTHAL	04/11/2017

RECEIVING PARTY DATA

Name:	REMBRANDT 3D HOLDING LTD
Street Address:	128 BULL HILL RD
City:	NEWFIELD
State/Country:	NEW YORK
Postal Code:	14867

PROPERTY NUMBERS Total: 3

Property Type	Number
Patent Number:	8558830
Patent Number:	9521390
Application Number:	15367393

CORRESPONDENCE DATA

Fax Number: (607)256-3628

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Address Line 2: SUITE 400
Address Line 4: ITHACA, NEW YORK 14850

ATTORNEY DOCKET NUMBER:	BL3.17-19
NAME OF SUBMITTER:	MICHAEL F. BROWN, REG NO 29,619
SIGNATURE:	/ mfb #29619 /
DATE SIGNED:	04/19/2017

Total Attachments: 1
source=00717034#page1.tif

ASSIGNMENT AND AGREEMENT

For value received STEPHEN BLUMENTHAL, residing at 128 Bull Hill Rd., Newfield, New York, 14867, (hereinafter the "Assignor") hereby sells, assigns and transfers to REMBRANDT 3D HOLDING LTD, a corporation organized under the laws of Nevis, and having a registered office at Trust Services (Nevis) Limited, Units 10-12, Springates East, P.O. Box 853, Government Road, Charlestown, Nevis, West Indies, and administrative offices at 128 Bull Hill Rd., Newfield, New York, 14867, its successors and assigns (hereinafter the "Assignee"), the entire right, title and interest in and to the following United States Patents and Patent Application:

Title	Number	Date
System and method for adaptive scalable dynamic conversion, quality and processing optimization, enhancement, correction, mastering, and other advantageous processing of three dimensional media content	12/642757 8,558,830	Filed 12/18/2009 Issued 10/15/2013
System and method for adaptive scalable dynamic conversion, quality and processing optimization, enhancement, correction, mastering, and other advantageous processing of three dimensional media content	14/054772 9,521,390	Filed 10/15/2013 Issued 12/13/2016
System and Method For Adaptive Scalable Dynamic Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering, and Other Advantageous Processing of Three Dimensional Media Content	15/367,393 2017/0085856	Filed 12/2/2016 Publ. 3/23/2017

The Assignor warrants to Assignee and its successors and assigns that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the Assignor, and that full right to convey the same as herein expressed is possessed by the undersigned.

Assignor:

Name: Stephen Blumenthal
Date: April 11, 2017

Assignee:
Rembrandt 3D Holding Ltd

By:
Name: Stephen Blumenthal
Title: Director
Date: April 11, 2017

US008558830B2

(12) **United States Patent**
Blumenthal et al.

(10) **Patent No.: US 8,558,830 B2**
(45) **Date of Patent: Oct. 15, 2013**

(54) **SYSTEM AND METHOD FOR ADAPTIVE SCALABLE DYNAMIC CONVERSION, QUALITY AND PROCESSING OPTIMIZATION, ENHANCEMENT, CORRECTION, MASTERING, AND OTHER ADVANTAGEOUS PROCESSING OF THREE DIMENSIONAL MEDIA CONTENT**

(75) Inventors: **Stephen Blumenthal**, Newfield, NY (US); **Ilya Sorokin**, New York, NY (US)

(73) Assignee: **3D Fusion, Inc.**, New York, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 221 days.

(21) Appl. No.: **12/642,757**

(22) Filed: **Dec. 18, 2009**

(65) **Prior Publication Data**

US 2010/0156897 A1 Jun. 24, 2010

Related U.S. Application Data

(60) Provisional application No. 61/138,926, filed on Dec. 18, 2008.

(51) **Int. Cl.**
G06T 15/00 (2011.01)
G06G 5/00 (2006.01)

(52) **U.S. Cl.**
USPC **345/419**; 345/581; 345/619

(58) **Field of Classification Search**
USPC 345/419, 581, 619
See application file for complete search history.

(56) **References Cited**

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6,496,598	B1 *	12/2002	Harman	382/154
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7,362,324	B2 *	4/2008	Iizuka et al.	345/419
7,844,001	B2 *	11/2010	Routhier et al.	375/240.25
2005/0078108	A1 *	4/2005	Swift et al.	345/419
2009/0167768	A1 *	7/2009	Bull et al.	345/473

* cited by examiner

Primary Examiner — Ke Xiao
Assistant Examiner — Jed-Justin Imperial
(74) *Attorney, Agent, or Firm* — Edward Etkin, Esq.

(57) **ABSTRACT**

In at least one embodiment thereof, the inventive system and method are directed to providing and configuring a novel platform-independent 3D content media container operable to: (1) support and store a 3D content media file with at least one 3D content modification/improvement technique applied to only specific predetermined portions thereof, and (2) selectively enabling particular optimal 3D content-related parameter settings for future application of at least one additional 3D content modification/improvement technique, to likewise be associated with one or more specific corresponding 3D content media file portion(s), and to also be stored in association therewith in the inventive 3D content media container. In at least one additional embodiment thereof, the inventive system and method are capable of determining and implementing various storage, transmittal, and application(s) of 3D content media processing/settings/parameter/profile configuration(s) prior to, or during, display of corresponding 3D content media.

19 Claims, 3 Drawing Sheets

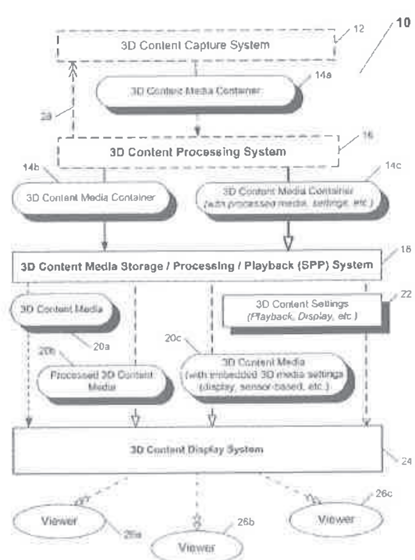


FIG. 1

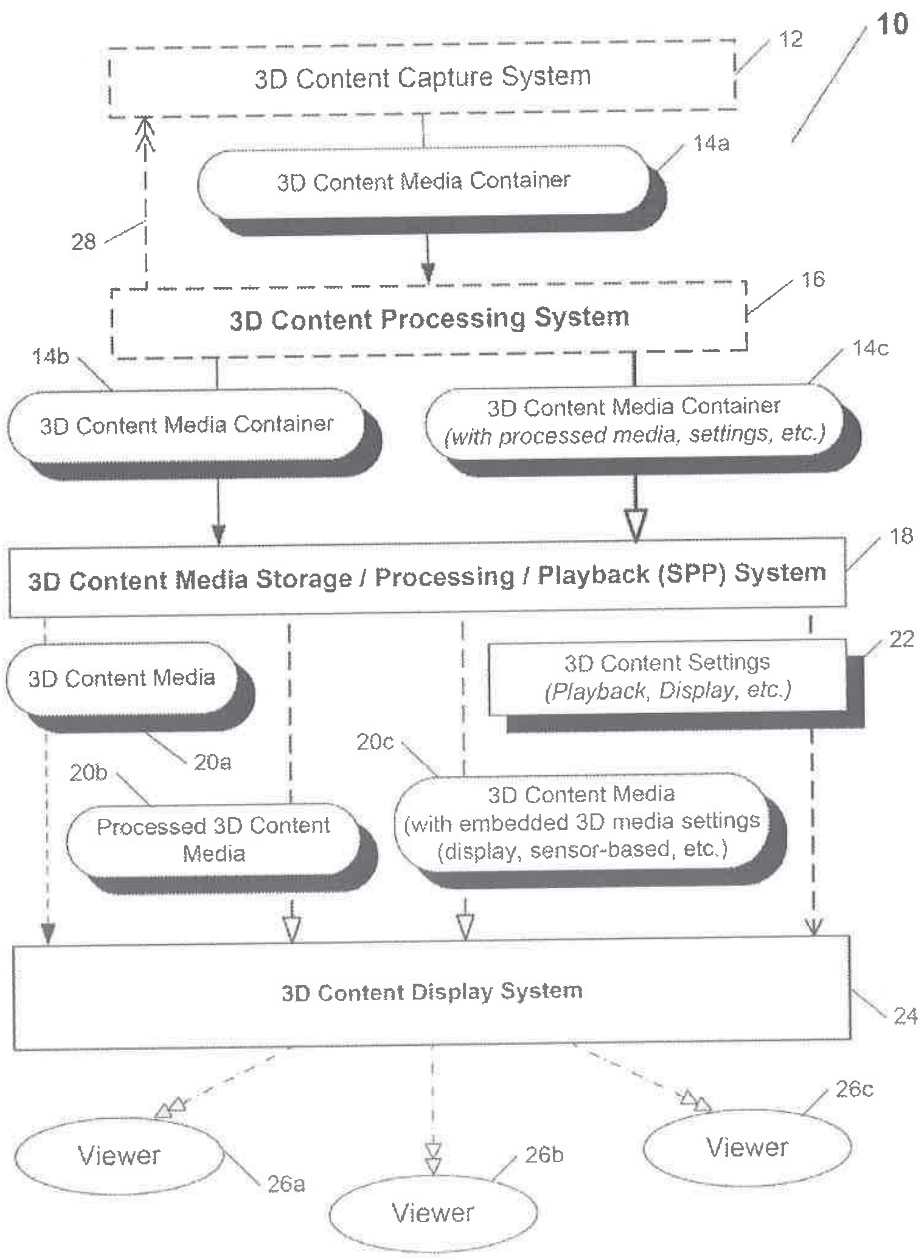

10
12
3D Content Capture System
14a
3D Content Media Container
28
16
3D Content Processing System
14b
3D Content Media Container
14c
3D Content Media Container
(with processed media, settings, etc.)
18
3D Content Media Storage / Processing / Playback (SPP) System
3D Content Media
20a
22
3D Content Settings
(Playback, Display, etc.)
20b
Processed 3D Content Media
20c
3D Content Media
(with embedded 3D media settings
(display, sensor-based, etc.)
3D Content Display System
24
Viewer
26a
Viewer
26b
Viewer
26c

FIG. 2

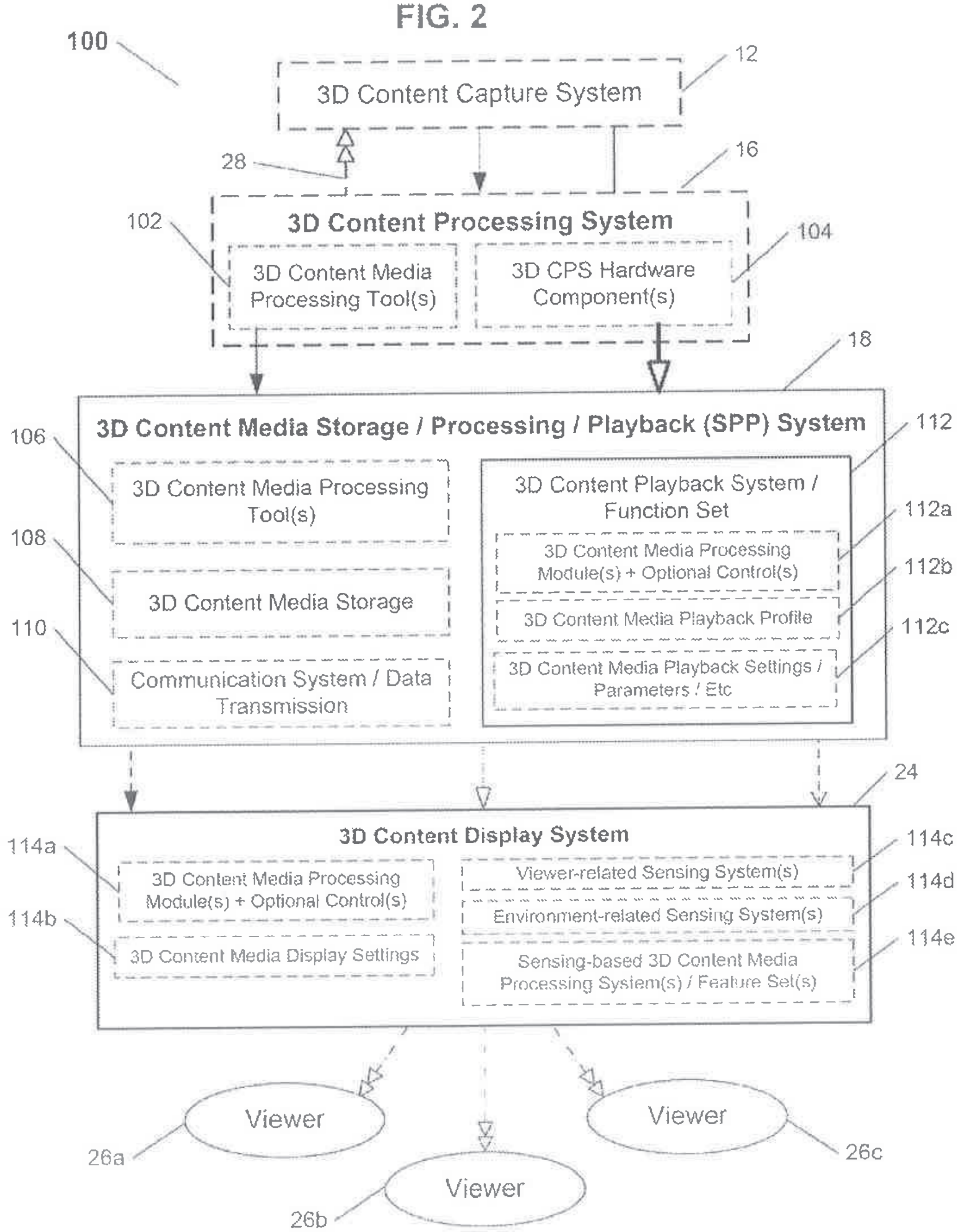
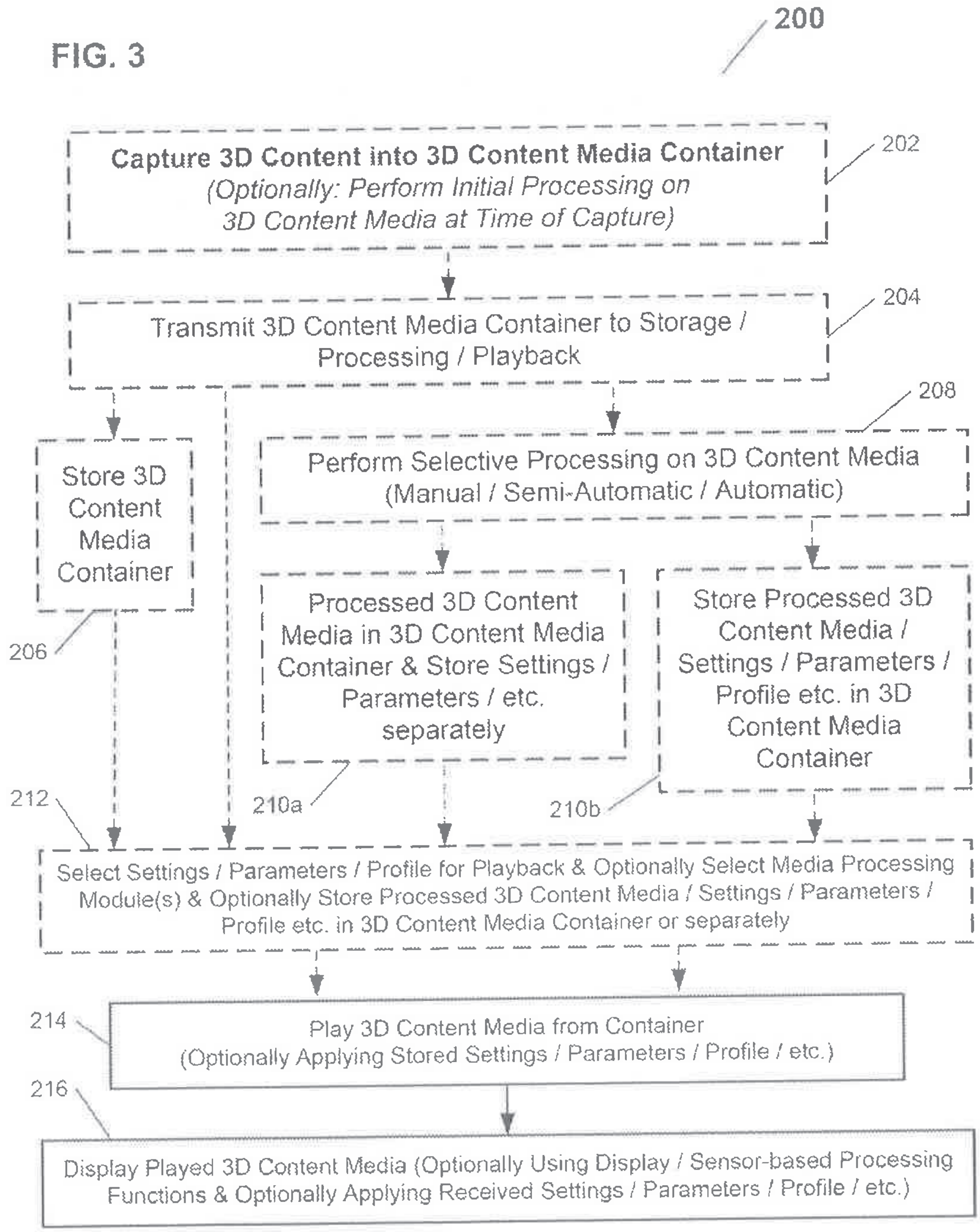

100
3D Content Capture System
12
28
16
3D Content Processing System
102
3D Content Media Processing Tool(s)
3D CPS Hardware Component(s)
104
18
3D Content Media Storage / Processing / Playback (SPP) System
106
3D Content Media Processing Tool(s)
108
3D Content Media Storage
110
Communication System / Data Transmission
112
3D Content Playback System / Function Set
112a
3D Content Media Processing Module(s) + Optional Control(s)
112b
3D Content Media Playback Profile
112c
3D Content Media Playback Settings / Parameters / Etc
24
3D Content Display System
114a
3D Content Media Processing Module(s) + Optional Control(s)
114b
3D Content Media Display Settings
114c
Viewer-related Sensing System(s)
114d
Environment-related Sensing System(s)
114e
Sensing-based 3D Content Media Processing System(s) / Feature Set(s)
Viewer
26a
Viewer
26b
Viewer
26c

FIG. 3


200
202
Capture 3D Content into 3D Content Media Container
(Optionally: Perform Initial Processing on 3D Content Media at Time of Capture)
204
Transmit 3D Content Media Container to Storage / Processing / Playback
208
Perform Selective Processing on 3D Content Media (Manual / Semi-Automatic / Automatic)
Store 3D Content Media Container
206
Processed 3D Content Media in 3D Content Media Container & Store Settings / Parameters / etc. separately
210a
Store Processed 3D Content Media / Settings / Parameters / Profile etc. in 3D Content Media Container
210b
212
Select Settings / Parameters / Profile for Playback & Optionally Select Media Processing Module(s) & Optionally Store Processed 3D Content Media / Settings / Parameters / Profile etc. in 3D Content Media Container or separately
214
Play 3D Content Media from Container
(Optionally Applying Stored Settings / Parameters / Profile / etc.)
216
Display Played 3D Content Media (Optionally Using Display / Sensor-based Processing Functions & Optionally Applying Received Settings / Parameters / Profile / etc.)

SYSTEM AND METHOD FOR ADAPTIVE SCALABLE DYNAMIC CONVERSION, QUALITY AND PROCESSING OPTIMIZATION, ENHANCEMENT, CORRECTION, MASTERING, AND OTHER ADVANTAGEOUS PROCESSING OF THREE DIMENSIONAL MEDIA CONTENT

CROSS REFERENCE TO RELATED APPLICATION

The present patent application claims priority from the commonly assigned U.S. provisional patent application 61/138,926 entitled "SYSTEM AND METHOD FOR ADAPTIVE SCALABLE DYNAMIC CONVERSION, QUALITY AND PROCESSING OPTIMIZATION, ENHANCEMENT, CORRECTION, MASTERING, AND OTHER ADVANTAGEOUS PROCESSING OF THREE DIMENSIONAL MEDIA CONTENT", filed Dec. 18, 2008.

FIELD OF THE INVENTION

The present invention relates generally to systems and methods for improving the 3D experience provided by playback and display of 3D media content, and more particularly to systems and methods for providing 3D content media-centric solutions that greatly improve the quality and impact and other desirable features of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and 3D media display solutions, thus maximizing the 3D experience produced therefrom.

BACKGROUND OF THE INVENTION

Various tools for capturing, generating, processing, playing back and displaying three dimensional (3D) content media (especially motion video), have been available for quite some time. Display technologies for 3D content media in particular have evolved quite a bit from the earliest barely passable offerings which required the audience to wear flimsy "glasses" provided with a different (red or blue) lens for each eye, to more advanced electronic "stereoscopic 3D" glasses equipped with remotely triggered liquid crystal display (LCD)-based lenses (acting as alternating individually controlled "shutters"), which provided its wearers with an engaging and quality '3D experience", given properly prepared 3D content media paired with the appropriate playback and corresponding display technologies working on conjunction with the 3D glasses.

However, this approach for providing a "3D experience" is quite cumbersome and very expensive to use and maintain, and has thus been of very limited commercial success, primarily being relegated to special entertainment venues, such as certain IMAX theaters and high-end amusement parks. In addition to expensive, and relatively fragile, glasses being required for each member of the audience (which in some cases excludes those who cannot comfortably wear them), the latest stereoscopic 3D solutions require sophisticated and expensive computer-based components for storing and processing the 3D content, as well as similarly complex and expensive electronic components for displaying the 3D content and remotely controlling the stereoscopic 3D glasses.

Of course, as is expected, the very limited availability and expense of the above 3D content media playback and display technologies, in particular, have led to a relative lack of interesting 3D content (due to the expense in its creation and the very limited commercial interest therein), which in turn has resulted in a very limited availability of 3D content capture and processing tools, thus essentially resulting in a "vicious cycle".

Nonetheless, in recent years, there has been a revolutionary leap in the solutions being offered for displaying 3D content media. Specifically, a number of companies, have developed and offered flat panel displays of varying sizes capable of creating a virtual 3D experience for the viewer without the need for the viewer to wear electronic or other types glasses or similar devices. Moreover, these displays do not require other specialized equipment and can work with specially configured 3D content that may be stored on, and played back from, conventional readily available computers. And, while these displays are still quite expensive, they are priced within reach of most organizations (and within reach of some consumers), with the price certainly poised to decrease exponentially, commensurate with an increase in production (as has been the case with the HDTV flat panel display market).

Therefore, for the past several years, ever since these newest stand-alone 3D ("SA-3D") content media display technologies have become available at relatively reasonable prices, there has been a widespread consensus that proliferation of three-dimensional (3D) content media (both in entertainment and in advertising), as well as of the hardware and software technologies necessary for SA-3D content capture, processing, playback, and display, is inevitable, and that the market for 3D-related technologies will experience explosive growth.

Nevertheless, to date there has not been a dramatic push forward that would make the above predictions become reality. One of the main reasons for this aforementioned lack of the expected proliferation of commercially successful SA-3D-related content, software and hardware offerings, is the fact that although these newest SA-3D content media display technologies have a number of very significant advantages over all previously known 3D-related offerings, they also suffer from a number of flaws. Specifically, on the average, the quality and impact of the 3D experience delivered by the available SA-3D solutions is lower than that of conventional high-end glasses-based stereoscopic 3D offerings. Moreover the relative position of each viewer to the SA-3D screen (in terms of vertical and horizontal viewing angles, distance, etc.) has significant impact on that viewer's overall 3D experience when viewing the displayed SA-3D content. Moreover, the existing SA-3D hardware and software solutions for the capture, processing, playback and display of 3D content media have focused on areas of expertise, offer individual and discrete benefits in various narrow aspects of 3D and SA-3D technologies with little or no regard for the offerings of other solution providers, resulting in literally dozens of incompatible proprietary software and hardware products with nothing to tie them together.

It would thus be desirable to provide a system and method directed to one or more modular unifying scalable solutions, preferably implemented in a configurable infrastructure, that greatly improve the quality and impact of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions. It would further be desirable to provide a system and method capable of achieving the above goals by selectively performing 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure from 3D content capture to 3D content media display. It would moreover be desirable to provide a system and method capable of determining and implementing selective or optimal storage, transmittal, and application(s) of

3D content processing/settings parameter/profile configuration(s) prior to display of corresponding 3D content media to one or more viewers thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, wherein like reference characters denote corresponding or similar elements throughout the various figures:

FIG. 1 is a schematic block diagram of an exemplary embodiment of the inventive scalable modular infrastructure for selectively implementing, configuring, and managing various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantageous processing and/or configuration;

FIG. 2 is a schematic block diagram of exemplary embodiments of various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantageous processing and/or configuration, that may be implemented in the novel infrastructure of FIG. 1; and

FIG. 3 is a process flow diagram of an exemplary embodiment of the inventive process, that may be performed in whole, or selectively in part, by at least one component of the inventive system of FIG. 2, or that may otherwise be implemented in one or more components of the novel infrastructure of FIG. 1.

SUMMARY OF THE INVENTION

The present invention is directed to a system and method for providing 3D content-centric solutions that greatly improve the quality and impact of 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and display solutions, thus maximizing the 3D experience produced therefrom. The novel system and method accomplish these goals by providing modular unifying scalable 3D content-centered solutions, preferably implemented in a configurable infrastructure, that improve the quality and impact of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions.

The inventive system and method advantageously enable automatic, semi-automatic or user-controlled selective performance of 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure (from 3D content capture, to 3D content processing (and/or 2D to 3D content conversion), and to 3D content media display), and in at least one embodiment thereof, the inventive system and method are capable of determining and implementing selective or optimal storage, transmittal, and application of 3D content processing/settings/parameter/profile configuration(s) prior to, or during, display of corresponding 3D content media to one or more viewers thereof.

Other objects and features of the present invention will become apparent from the following detailed description considered in conjunction with the accompanying drawings. It is to be understood, however, that the drawings are designed solely for purposes of illustration and not as a definition of the limits of the invention, for which reference should be made to the appended claims.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The system and method of the present invention, address all of the disadvantages, flaws and drawbacks of all previously known 3D-related hardware and software offerings, by providing novel 3D content media-centric solutions that greatly improve the quality and impact of any 3D media content, while advantageously decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and 3D media display solutions, thus maximizing the 3D experience produced therefrom for one or more viewers.

The novel system and method accomplish the above goals by providing modular unifying scalable 3D content-centered solutions, preferably implemented in a configurable infrastructure, that greatly improve the quality and impact of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions.

In various exemplary embodiments thereof, the inventive system and method advantageously enable automatic, semi-automatic or user-controlled selective performance of 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure (from 3D content capture to 3D content media display), and in at least one embodiment thereof, the inventive system and method are capable of determining and implementing selective or optimal storage, transmittal, and application(s) of 3D content processing/settings/parameter/profile configuration(s) prior to display of corresponding 3D content media to one or more viewers thereof.

It should be noted that current 3D media content capture, processing, playback and display solutions take the "lowest common denominator" approach to applying playback/display optimization and related settings (intended to improve the appearance, quality, impact and overall "3-D Experience") to the 3D content media being displayed to at least one viewer thereof. This is very problematic because the desirable settings and parameters, as well as the necessary processing power and other requirements, for optimizing and maximizing the quality, impact and overall 3-D experience level for any displayed 3D media content, vary greatly between different 3D content media files, and even between different segments/portions within any particular 3D content media file itself. In particular, these variations largely depend on the specific 3D scenes being shown (i.e., on the depicted objects/subjects, their relative motion, complexity, backgrounds, lighting, etc.), and on other external factors, such as the original 3D content capture and/or conversion parameter settings, the capture hardware used, the current display, and even on the viewers' relative position (orientation, elevation, distance, etc.) thereto.

Finally, prior to discussing the various embodiments of the present invention in greater detail below, it is important to note that while many of the embodiments of the present invention (and the various novel tools, techniques and processes relating thereto), are described and discussed as being implemented and/or utilized in the field of 3D visual entertainment (film, television, games, etc., all embodiments of the inventive system and method, can be readily and advantageously utilized in virtually any scientific, military, medical, forensic, or industrial application based on, or involving 3D visualization or display and/or manipulation of 3D content medial, as a matter of design choice, without departing from the spirit of the invention.

Referring now to FIG. 1, an exemplary embodiment is shown of an inventive scalable modular infrastructure **10** for selectively implementing, configuring, and managing various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantageous processing and/or configuration.

The infrastructure **10** includes optional components **12** and **16** (3D content capture system **12**, and 3D content processing system **16**) for selectively capturing and optionally processing 3D content media prior to placing it into a 3D content media container (e.g., file, stream, etc.). The infrastructure **10** also includes a 3D content media storage/processing/playback SPP system **18**, operable to selectively store, process, and/or play back 3D content media from a medial container that may be received from components **12** and/or **16**, or that may be delivered from another 3D content media source (such as media converted from another 3D format, or from non-3D content source).

The SPP system **18** preferably communicates with a 3D content display system **24**, operable to display 3D content media (in one or more configurations, and capable of displaying/utilizing at least one of: unprocessed 3D content media **20***a*, processed 3D content media **20***b*, optimized 3D content setting for use with other 3D media content received from a source outside of the infrastructure **10**, etc.) to at least one viewer (e.g., to viewers, **26***a*-**26***c*).

In at least one embodiment of the present invention, the 3D content processing system **16** may also optionally comprise at least one 3D content processing feature/function that is optimized for utilization in conjunction with the 3D content capture system **12**. For example, in one embodiment of the infrastructure **10**, the 3D content capture system **12** may actually be a conventional or a modified 3D content capture system, that is provided with additional necessary features (such as scene/visual field depth mapping (or equivalent capabilities) to enable dynamic (and optionally "on the fly") capture of 2D content, plus sufficient depth (and/or related non-image) information that is sufficient to enable the systems **12** and **16** to produce desirable 3D content for delivery to the SPP system **18**. An exemplary embodiment of operation of the infrastructure **10** is discussed in greater detail in conjunction with FIG. **3**.

Referring now to FIG. **2**, various exemplary embodiments of the possible components of an inventive system **100**, that may be implemented in the inventive infrastructure **10** of FIG. **1**, operable to selectively provide adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantageous processing and/or configuration, that may be implemented in the novel infrastructure **10** of FIG. **1**. Preferably, one or more of the components (**12**, **16**, **18**, and **24**), and subcomponents (**102** to **114***e*) of the inventive system **100**, are capable of performing one or more steps of an exemplary novel process **200** of FIG. **3**.

Referring now to FIG. **3**, an exemplary embodiment is shown as a process flow diagram of an exemplary embodiment of the inventive process, with steps **202** to **216**, that may be performed in whole, or selectively in part, by at least one component of the inventive system **100** of FIG. **2**, or that may be implemented in one or more components of the novel infrastructure **10** of FIG. **1**.

In summary, the inventive system **100** (through selective operation of one or more components thereof, as may be implemented in infrastructure **10** of FIG. **1**), in additional exemplary embodiments thereof, preferably associates at least one predetermined 3D content improvement ("3DCI") parameter set (optimization, playback, and/or display settings and/or parameters, selection of one or processing modules and/or stages of use thereof (or example during one or more of: capture, post-processing, playback or display), display tool adjustments, etc.), with 3D media content containers.

In at least one embodiment thereof, the optimal 3DCI parameter set comprises a plurality of "static to dynamic" display tools adjustments, which may be advantageously recorded and/or otherwise embedded in the 3D content media file, to thereby become a permanent feature thereof during later playback and/or processing (e.g., post production, etc.) of the 3D content media. In another embodiment of the present invention, the optimal 3DCI parameter set integration technique may also be utilized as a playback feature which is interpreted by a proprietary software and/or hardware 3D media player (which, by way of example can be configured as a "set top box" or equivalent, for 2D to 3D content conversion, playback of "enhanced" 3D content media having an integrated 3DCI parameter set, and for other functions (such as utilization of de-encryption solutions for playback of protected 3D content media.

Advantageously, this association and/or linking, occurs on a scalable basis from the most basic level at which an optimal 3DCI parameter set is associated with one or more corresponding 3D content media containers (that may be in a container directory, a playlist, a queue, or in a similar storage container), such that the appropriate 3DCI parameter set is activated in conjunction with its corresponding 3D content media from the container being played, to a more advanced level at which different 3DCI parameter sets are associated with (or otherwise linked or assigned to), the appropriate different portions of each 3D content media container, such that during playback and/or display thereof, different sections of the displayed content receive the optimal level of "treatment".

The novel system and method advantageously address and cover both the creation/determination/configuration of various scalable 3DCI parameter sets during 3D content capture, during initial processing, at any other time up to and including on-the-fly during playback, or any combination of the above, as a matter of design choice without departing from the spirit of the invention. Similarly, the process of creation/determination/configuration of the 3DCI parameter sets can be wholly or partially automated, or can be manually performed as a "creative process" by one or more content professional, preferably utilizing one or more 3DCI tools and support modules as desired or as necessary.

For example, tools utilizing novel dynamic and adaptive variable 3D depth and layering techniques of the present invention, may readily be used for both automated and content professional-directed 3DCI parameter creation (e.g., the 3DCI may include desired depth adjustment parameters, variable layer densities centered on certain displayed objects or object types, dynamic variable resolution based on relative distance of the closest object depth layers to the viewer, etc.).

The 3DCI parameter sets may be linked to, or otherwise associated with the respective 3D content media containers (or portions thereof), and may thus be stored in dedicated or other form of files, containers or libraries, separately from the 3D content media containers, or may be stored within the 3D content media containers, (e.g., embedded therein, as discussed above).

The inventive system **100** (through selective operation of one or more components thereof, as may be implemented in infrastructure **10** of FIG. **1**, for example in accordance with the process **200**, or otherwise), in various additional exem-

plary embodiments thereof is operable to provide selective, automatic, or user-controlled dynamic/adaptive/scalable utilization of layered depth measurement/mapping techniques in 3D content media, coupled with techniques for identifying and spatially (3D) tracking static and moving displayed objects in the depth mapped layered scenes to provide the desired optimal level of at least one predefined aspect of 3D content experience. Advantageously, in accordance with the present invention, the novel system **100** preferably comprises sufficient hardware and/or software components and subcomponents to provide and utilize one or more of the following advantageous and novel functionalities/techniques which are contemplated by the present invention:

- Utilization of existing 3D field depth-detection cameras (and related and/or substantially equivalent hardware) during the 3D content capture/acquisition stage, to acquire a predetermined number of depth layers for the 3D content to form the desired layered "depth field environment" for each 3D content frame/scene, etc., which may be the same depth quantity for the entire container, or which may dynamically, adaptively or selectively vary for different portions of the content.
- Assignment of predetermined amounts of layers to various displayed objects in the 3D content being captured and/or converted. Optionally, the assignment process may utilize variable layer density (e.g., depending on relative depth of different parts of the objects). Alternately, an object's layer density distribution (or profile) may be shifted/adjusted dynamically as the object moves within the depth field.
- Determination, tracking and use of at least one variable dynamically determined/adaptive "focal" layer (i.e., everything behind the focal layer needs less detail and less layer density, anything close needs more) for entire scenes, or for portions thereof.
- Determination, tracking and/or use of different variable dynamically determined/adaptive "focal object" plural layers assigned to one or more objects in various 3D content scenes, and that can move to different depths depending on relative depth positions of the assigned object, thus enabling variable layer density across objects (essentially providing, to the inventive system **100**, a control protocol for simplified manipulation of an object's depth layer distribution).
- In conjunction with one or more of the various features above, utilization of a mixture of different image resolution magnitudes (pixel density, etc.), and/or optionally of related image processing (anti-aliasing, etc.), for portions of objects/scene regions in an optimized manner (for example, by processing/displaying higher resolutions for those object layers that are closest to the viewer (or that otherwise would benefit from additional detail)).
- Optionally, maintaining a selected level of "geospatial accuracy" with external calibration distance points or with internal software reference markers, enables visual depth adjustment to precise geo-spatially accurate images to be accomplished to a degree as may be desired (or necessary) for one or more 3D content applications, up to, and inclusive of, extremely dense layering across each 3D content scene and/or object(s) (for example as may be required for military, scientific, and/or medical applications, etc.).
- Utilization\ and/or adaptation of various advantageous geo-centric survey depth (elevation) mapping techniques and methodologies, preferably with additional modifications applied thereto to make them dynamic, adaptive, and highly configurable.
- Selective configuration, implementation, and use of various additional features including, but not limited to: dedicated 3D processing (D3DP) hardware (e.g., "black box") re-mastering/editing tools, depth correction techniques, various display/media player modules and editing tools, streamlining D3DP hardware rendering conversion processes (e.g., grayscale values to corresponding layer depth locking, and later image depth manipulation/correction/optimization via grayscale value adjustments, etc.), and so forth.

It should also be noted that the various embodiments of the inventive system and method, can be advantageously configured, and/or adapted, to utilize and/or combine the very best of currently available (as well as any future) 3D-related solutions in an interoperable manner, that is as transparent as possible to the end user (whether the user is in the field of 3D content creation, or is part of the 3D content audience).

By way of example, the present invention may be implemented, in whole or in part, in connection with, or utilizing a 2D to 3D video conversion server (3DVC server), utilizing various additional applications and software-based tools. This technique may employ a variety of commercially available software tools designed to provide for some specific 2D to 3D conversion techniques such as separate interval field sequential frame grabbing, and thereafter mixing of the subsequent frames to create a depth map based on horizontal motion (which in itself is a sub-standard 3D conversion technique). However, when this approach, is integrated with a variety of other compatible 3D content enhancement techniques, and further assisted/upgraded by the aforementioned inventive system features and tools, it may be configured and implemented to perform at a substantially higher standard of 3D depth conversion, and therefore become an excellent candidate for an inexpensive and easily to use basis for a Broadcast Quality 3D video standard. It should be noted that the opportunity to integrate a number of commercially available 2D to 3D video depth conversion methodologies with a 3DVC server exists only as a consequence of the implementation of the various novel depth mapping correction and relating techniques of the inventive system **100**.

Therefore, the combination of the various commercially available 3D-related tools in concert with a 3DVC server, a media player, the various novel post-processing and display tools of the present invention, unexpectedly and advantageously resulted in the discovery of a completely unique and new process of image correction, 3D depth mapping, and depth impact optimization, that, when properly used and configured in accordance with the present invention are capable of elevating conventional 2D+Depth 3D media to Broadcast quality.

The various inventive depth mapping solutions and novel techniques, when applied to 3D content media provided by a conventional 3D 3DVC, unexpectedly result in a "remastering" of the 3DVC server, thus constituting an entirely new commercial application of a conventional 3D technology package "fused" with various novel solutions offered by the present invention, and therefore providing a breakthrough opportunity to produce 3D 2D+Depth stereoscopic 3D content media having maximum depth 3D visual impact, but without distracting visual artifacts.

In addition, it should be noted that while a conventional 3DVC server most is most commonly used to convert 2D content to 2D+Depth 3D content, it is also capable of converting dual path stereoscopic optical signals to the 2D+Depth format, and also capable of converting stereoscopic side-by-side and field sequential stereoscopic 3D video, into the 2D+Depth format. Fortunately, the various

techniques and solutions of the present invention are fully applicable for advantageous utilization in connection with any and all of the aforementioned conversion formats which are supported by the 3DVC server.

Essentially the system and method of the present invention have gone one step further and readily serve as a basis for producing a 3D software solution (that may be optionally augmented with, or replaced by, a hardware component) that is capable of grabbing stereoscopic pairs from a nine multi-view 2D+Depth conversion, and reformatting them back into a side-by-side, or a dual-path conventional 3D signal, for viewing the reformatted 3D content media using stereoscopic 3D glasses. Accordingly, the inventive techniques close the loop and allow the use of a conventional 3DVC server to convert 2D content media not only into a 2D+Depth format, but also automatically into a highly desirable and commercially viable stereoscopic 3D medial content that is necessary for all 3D gasses-based display systems, large and small, thereby enabling a highly demand solution to be offered during the inevitable transition between from 3D glasses-based display systems to ASD systems.

When the above-described combined technology package (hereinafter referred to as a "3DF-3DVC system") is used with conventional and/or novel 3D display tool adjustments and settings, (which, in accordance with the present invention may be readily embedded into a 3D content media file (and optionally recorded/captured "on-the-fly")), the resulting output not only corrects any remaining 3D video image issues/flaws, but will at the same time provide the basis for development and implementation of various guidelines and tools for rapidly effecting a major increase in the impact of the depth perspective visuals in the display of various available and future 3D content media, thus establishing the methodology and infrastructure that is required for widespread production and proliferation of 3D stereoscopic video broadcast quality standards.

For example, various inventive 3DF-3DVC system techniques may be employed in all of 3DVC server applications to effectively upgrade the 3D content media quality through "Re-mastering". When these techniques are applied to pre-converted 2D+Depth, s3D 3D video clips, which are designed for display on conventional commercially available 3D ASD screens, advantageously, the issues of depth error correction, cone double image removal and ghosting artifacts may be corrected and therefore eliminated.

The novel techniques and solutions provided in various embodiments of the inventive system **100**, and referenced above in connection with their advantageous ability to synergistically combine with, and vastly improve, conventional 3D systems and solutions (e.g., 3DVC servers, etc.) are described in greater detail below in connection with various additional exemplary embodiments of the present invention.

The various embodiments of the inventive system **100** of FIG. **2**, and of the system operation process **200** of FIG. **3**, preferably comprise and rely on a selection of a plurality of novel and proprietary "key guidelines" for selection of the most appropriate content (or portions thereof) for maximum impact and visual effect in 3D. By way of example, ideally, the best 3D stereoscopic video content produced for conversion, is captured with the intent to convert the content to 3D during the storyboard stage. Therefore, it is greatly preferable to capture 3D content media in dual optical path stereoscopic 3D, which can still be vastly improved by the various inventive post-production and 3DF-3DVC server techniques. Various additional key guidelines that may be readily implemented in accordance with the present invention include, but are not limited to, the following:

The editing process of pre-captured 2D video can make or break the depth impact produced in 3D content media produced through a 2D to 3D conversion process. Therefore, choosing the best video frames for 2D to 3D conversion, is described below as the first step in the editing/post-production/re-mastering process in optimal 3D-3DVC system operations. Specifically:

The best frames for 3D 3DVC server conversion have content that is on the brighter side, with few dark images (where the sense of depth can be easily lost). Therefore, designing the content media so that darker objects and backgrounds are behind brighter objects in the foreground, will maximize the 3D effect.

Content with multiple spatial layers, larger objects and smaller objects creating reference points for depth perspective, will provide richness in texture and lighting effects (e.g., shadows are quite advantageous).

Content which is not fast moving from shot to shot is also preferable. High speed dynamic content does not work well in 3D content media. This is because in stereo 3D the viewer's eyes need time to register the full impact of the image, so slower content motion is better, especially in the case where the content comprises complex action scenes.

Larger objects which hold perspective, such as depth perspective on equipment, large objects, such as buildings, or interior shots in which the perspective is already attempting to simulate 3D, are all advantageous. Any "3D type" shots during which the camera is moving around an object and looking at it from multiple viewpoints, are also excellent.

Content which comprises some objects or actions that are "coming forward" from a rear perspective of the display to the front of the display.

Content in which the background is darker than the foreground, or in which the object is in a high contrast to the background, and moving forward into the foreground facilitates a desirable 3D impact.

Content comprising text graphics that are relatively centered and stationary, as opposed to being in motion (e.g., from left to right, and vice-versa), as well as content comprising text graphics that are centered and moving from the rear of the display to the front of the display are good.

Content in which objects appear smaller in the background, which then move forward into the foreground, while growing in size as they do so, as well as content comprising object perspective shots, are likewise good.

Any content image that is rendered utilizing 3D modeling techniques for a 3D depth effect. All computer generated graphic images, if they are not being displayed at very high speed are good candidates for such conversion.

Content which comprises imagery that moves from the center of the display background to center of the display foreground, avoiding image overlap with the frame of the display, will give a far stronger, the best forward "POP out of the display", effect.

Likewise, the key guidelines also include a number of guidelines relating to identifying poor choices in 3D content media selection. Some examples of the worst types of content candidates for 3D conversion by the 3DF-3DVC server, include, but are not limited to:

Content comprising high speed "jump shots" which are approx 6 seconds or less, from segue to segue.

Content comprising dark image shots in the foreground, and light image shots with many small moving objects on the display are difficult.

Content comprising Objects traveling from left to right with minimum size change, as well as content comprising multiple objects of the same size and in the same plane, with very little layering, or visual reference points.

Content in which blurred objects are moving away from each other, and objects lacking sharp lines and edges, make it difficult to visually defined masses.

The various embodiments of the inventive system **100** of FIG. **2**, and of the system operation process **200** of FIG. **3**, also advantageously comprise and rely, on a selection of a plurality of novel and proprietary "guidelines for post/prep 2D editing of 2D content for conversion" that facilitate the selection of the most appropriate techniques, methodologies and/or of parameters used in connection therewith, for achieving the maximum impact and visual effect in 3D:

1) Sharper Edge Detection Preparation: When assembling edited 2D content for conversion to 3D, brightness gain control should be used to step up the brightness level, thereby defining all edges hiding in shadows.

(a) For this editing technique, it is useful to create maximum edge definition using the sharpness control and the contrast control to darken shadows, leaving edges behind. The use of color intensity to accomplish the same definition of edges and masses is also effective. Re-adjustment of contrast and brightness can thereafter be added on the display tool level stage after the 3D conversion process takes place.

2) Fast Action Time corrections: The rule of thumb for this exemplary inventive guideline, is that if a frame count of a clip of content media is less than 100 frames over 3 seconds, then 3D conversion is pointless. The visual detail for such content becomes too fast for the eye to register depth. The solution to dealing with such troublesome content is to either add frames to the pre-edited 2D "fast action shots" by duplication, or by recording the objects in slow motion at the highest resolution possible, or by slowing down the playback of the content media and utilizing any and all available editing tools to correct blurred edges, shadows without objects, and low focus moving elements (which blend into other objects due to poor video/film quality). Likewise, "speed jump shots" are among the worst candidates for conversion to 3D

(a) The only effective option is to treat the wide variety of multiple "objects in fast action" content shots, as one large object, to only define the depth map in terms of two or three levels of depth, and to paint the objects without detail. As an alternative, maximum contrast, going from white foreground to gray side edges to black background may be used, treating every object in the scene in the same manner (the faster the scene, the fewer the contrasting depth map relationships).

(b) Another novel technique that may be advantageously used to slow down an undesirably fast moving image, is to locate elements in high speed action shots which lend themselves to CGI content additions—it is sometimes possible to create a CGI insert edit with a number of frames which will be "new" content, and which are specifically designed to dramatize an existing scene with an additional 3D depth object in the image, with the purpose of creating a specific frame enhanced depth perspective.

3) Opening 3D impact is the most important image of the clip, and therefore it is very advisable to ensure that the 3D impact increases over the first 20 seconds, or few minutes of a 3D content media clip, giving the audience a chance to adjust their vision from 2D film to 3D content. It is also advantageous to script objects moving out of the display in the opening scenes of the content, and to ensure that all or most titles and graphics are rendered in 3D motion CGI (or equivalent) and not presented as 2D static images.

4) 3D Visual Rest spots: the time frame of a continuous display of depth intensive images should pre stage the dramatic, most intense elements of the story line. It is advantageous to use 3D depth perspective to create realism, which enhances the power and the significance of the story, the action and the drama. The counterpoint to this is also true in that lowering the 3D impact after the momentary high point in the story line, allows the audience to experience the previous images intensity and recover before the next onslaught.

(a) Consequently there is a real need to create visual realism "highs" as well as "rests periods" to allow the intensity of the 3D content to be properly absorbed and processed by the viewers and contrasted to the imagery in the "rest" spots.

5) Use of camera angles. Use of normal videographic camera angles, close-ups, slow pans, and other conventional film techniques, allows the full detail of a scene to comes into focus. A greater level of detail leads to a higher quality conversion, and a corresponding greater degrees of perceived 3D depth realism and depth impact. It should be noted that 3D depth images are able to offer a variety of special effects in support of a story, or they can take the place of fast action shots, providing depth stimulus, as a substitute for dramatic action.

The various embodiments of the inventive system **100** of FIG. **2**, and of the system operation process **200** of FIG. **3**, further advantageously comprise and rely, on a selection of a plurality of novel and proprietary "guidelines for 3DF-3DVC system time editing and related techniques" that facilitate the selection of the most appropriate time line editing and related techniques, methodologies and/or of parameters used in connection therewith, for facilitating the maximum possible impact and visual effect in 3D content media.

There are many levels of 3D depth image impact, ranging from a classic "pop out of the display" major impact, in which the depth is the story, to a "depth window" where everything is three dimensional from the display surface backwards, and in which depth appears to be secondary to the story.

A third, and more subtle depth impact, which mimics realism, exists as a balance between the above two extreme effects, and advantageously offers an undercurrent of richness which supports the story line, while enhancing it by making the images so convincing, that the viewer is barely able to maintain their objectivity, or actually loses it—it the ultimate achievement for a 3D special effects to manipulate the viewer, without the viewer's realization. The process of guiding the viewer into this desirable "depth realism frame of mind" has undergone extensive scientific research and study, as is often referred to by the term "3D Presence".

The following exemplary novel and proprietary techniques that may be readily implemented in, and utilized using the inventive system **200**, are designed not only to enhance the depth map of the 3D content media image quality per se, but to also provide a framework of techniques which are designed to "seduce" the viewer into an involuntary loss of objectivity with respect to their viewership of the specially edited/processed 3D content. To accomplish this goal, the depth perspective in various scenes must be as self evident as possible—if the viewer is "hunting" for the 3D effect, them this

technique has failed. The following inventive techniques, referred to above, may be used to produce desirable and advantageous "Depth special effects":

1) The first key step is to produce 3D content media that is free of all video artifacts causing any physical discomfort such as eye strain, dizziness, headaches etc. This leads directly to the need for all 3D stereoscopic images to perform at traditional 2D level of broadcast standards (This is the focus of the first group of the above-described inventive techniques, relating to 3D depth map correction.

2) One of the keys to creating broadcast quality 2D to 3D conversion images is to be able to address the depth spatial relationships in each frame in a manner which builds continuity of depth mapping, so that following frames are building the same depth relationships within the eye of the audience, as previously viewed frames of like images. This topic is the second area of novel capabilities of the inventive system and method the use of geo spatial depth grid points of reference.

3) By maintaining a consistent level of depth information on the screen, the audience is able to increasing perceive greater and greater degrees of depth detail, which results in a lowering of the mind's censorship cues telling us that these images are not "real". In 3D depth perspective, the greater the degree of depth realism, the higher the degree of 3D immersiveness, leading to an increase in the viewer's emotional engagement—this inventive technique is referred to as "command frames."

4) The audience needs to become accustomed to seeing everything in the frame in 3D, effortlessly. At that point the 3D cues which trigger depth perception, have formed the habit of seeing in 3D, as it is the natural way humans see, resulting in not seeing the non 3D visual cues, further intensifying the 3D impact. This novel development is based on using the layering technique of various commercial tools to enhance detail, sharper edge detection, and gray scale shading, creating a baseline 3D effect.

5) The overall intensity of the depth map image may alter dramatically between close up to wide shot, but the error correction of all the frames must be consistent, the general geospatial relationships, need to be consistent, and except where it is intentional that the image be driven to the edge for added impact, images should not be jarring in their incorrect juxtapositions to each other. If the effect of the depth perspective is to keep the viewer from "getting lost in the movie", then the effect is counter productive. The novel technique designed to accomplish this goal, is the adjustment of the 3DF-3DVC system screen position control. This control is part of the 3DF-3DVC system set up, and its adjustment is made before the clip is processed. A correct setting should be identified for each segment of the clip requiring drastic visual changes, and only the frames which are best served by the recorded position of the screen placement control should be exported at that particular screen position setting.

6) If the purpose of the 3D effect is to provide an entertaining visual level of excitement, then the effects which support this high impact depth visuals comprise "over the top pop out of the front of the screen" image quality. There are a number of proprietary techniques which have been discovered in connection with the present invention to create such effect by way of example, one such technique involves creation of multiple layers of contrasting depth maps, on adjacent objects, thus forming a visual basis for comparison.

7) Sometimes it is necessary to create an exaggerated depth effect in order to define the image and focus the viewers' attention thereon. The means to accomplish this is utilization of the inventive "exaggerated depth mapped image" technique. This technique created an illusion of how a particular object is "expected" to look. It is more important that the images meet expectations, than be "correct". In order to accomplish this, many times it is necessary to overstate the depth effect of an object in gray scale values—in order to get many of the objects to appear consistent with the other depth effects, it is necessary to "showcase" a number of objects to create the desired focus of visual attention.

Other image correction effects, that may be used in accordance with the various embodiments of the novel system **100** and the novel process **200** of the present invention, include, but are not limited to, the following:

Gray scale depth mapping correction on multiple planes.
Creating sharper edge detection layers for volume definition.
Layers for Command Frames.
Layers for Action Frames
Layers for Static frame backgrounds
Layers for perspective shading and volume
3D boxes for grid mapping
3DF-3DVC system front of screen positioning, relative to projection out of the screen layer, and mapping tricks for impact.
3DF-3DVC system special effects for creating compromise image effects without losing definition.
3D Histogram adjustments.

As a result, in view of all of the above, the use of various embodiments of the inventive system and method (or of portions thereof), enables companies to offer, and consumers and other end-user parties to experience, 3D content media in a very cost-effective and efficient manner, thus overcoming the flaws and drawbacks of all prior 3D-related offerings that served as barriers to the well-deserved success of the 3D media experience market, and making inexpensive and ready availability of the "3D experience" a reality.

Thus, while there have been shown and described and pointed out fundamental novel features of the inventive system and method as applied to preferred embodiments thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices and methods illustrated, and in their operation, may be made by those skilled in the art without departing from the spirit of the invention. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same way to achieve the same results are within the scope of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

We claim:

1. A method, implemented in at least one data processing system, for improving the efficiency, quality, viewing comfort and/or visual impact of a 3D experience capable of being provided to at least one viewer of a 3D content media comprising a plurality of content sections, in conjunction with the use of at least a portion of a plurality of predetermined 3D content modification techniques, the method comprising the steps of:

(a) identifying at least one content section of the 3D content media comprising at least one 3D media element and selecting at least one corresponding predefined plural 3D content modification technique that is configured for provision of optimum improvement of the 3D experience when applied thereto;

(b) for each said selected at least one predefined plural 3D content modification technique configured for then-current application to said corresponding at least one 3D media element, applying said selected at least one predefined plural then-current 3D content modification technique thereto;

(c) for each said selected at least one predefined plural 3D content modification technique configured for future application to said corresponding at least one 3D media element, determining a setting for at least one parameter of said selected at least one predefined plural future 3D content modification technique, optimal for application to said corresponding at least one 3D media element;

(d) associating a reference to said selected at least one predefined plural future 3D content modification technique and said determined at least one optimal parameter, with said corresponding at least one 3D media element;

(e) selectively repeating said steps (a), (b), (c) and (d) for at least one additional section of the 3D content media;

(f) enabling an operator to view results of said steps (a), (b), (c) (d), and (e), and to at least one of: selectively cancel at least one result of at least one operation previously performed at least one of said steps (a), (b), (c), (d), and (e), and selectively change at least one operation previously performed at least one of said steps (a), (b), (c), (d), and (e), to an alternate operation selected by the operator;

(g) after conclusion of said step (f), generating a dynamic 3D content media container file configured for playback to at least one viewer utilizing at least one 3D content playback system operable to apply said selected at least one predefined plural future 3D content modification technique to said corresponding at least one 3D media element in accordance with said at least determined at least one optimal parameter, and further configured to store, for each 3D content media element identified at said step (a), at least one of:

at least one immediate 3D content modification applied at said step (b), and

at least one said associated reference to said at least one corresponding predefined plural future 3D content modification technique, and said determined at least one optimal parameter therefor;

such that said dynamic 3D content media container file comprises 3D media content having at least one modified content section each comprising at least one modification specifically optimal for application thereto, thereby maximizing the efficiency, quality, viewing comfort and/or visual impact of the 3D experience being provided to viewers thereof during playback.

2. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the 3D content media comprises at least one of: stereoscopic 3D content, and auto-stereoscopic 3D content.

3. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the 3D content media comprises at least one of: first 3D content media previously captured by at least one 3D content capture system, second 3D content media previously generated by at least one 3D content source, third 3D content media previously converted, by a 3D content capture system, from captured 2D media content, and fourth 3D content media previously converted, by a 3D content source, from previously generated 2D content.

4. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said at least one content section of the 3D content media, identified at said step (a), comprises a plurality of content frames comprising said at least one 3D media element.

5. The method of claim 4, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said predefined plural content frames comprise a corresponding scene, and wherein each said at least one 3D media element comprises at least one of: a static 3D displayed object, and a moving 3D displayed object.

6. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein at least one of said steps (a), (b), (c), (d) and (e), is performed by the at least one data processing system under manual control of an operator.

7. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said at least one 3D content playback system comprises at least one of: a 3D content media player operable to process said dynamic 3D content media container file for playback by generating therefrom and transmitting a 3D content output signal to a corresponding connected 3D content display system, and a 3D content display system operable to process said dynamic 3D content media container file for playback by generating therefrom, and displaying said 3D content output signal.

8. The method of claim 7, wherein said at least one 3D content playback system is operable to apply each said at least one predefined plural future 3D content modification technique to said corresponding at least one 3D media element of said 3D content media, in accordance with said at least one optimal parameter therefor, further comprising the steps of:

(h) providing said dynamic 3D content media container file, generated at said step (f), to said at least one 3D content playback system;

(i) identifying, by said at least one 3D content playback system in said dynamic 3D content media container file, at least one said associated reference to said at least one corresponding predefined plural future 3D content modification technique, and said determined at least one optimal parameter therefor; and

(j) applying said at least one referenced corresponding predefined plural future 3D content modification technique to said corresponding at least one 3D media element of said 3D content media, in accordance with said at least one optimal parameter therefor.

9. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said plurality of predetermined 3D content modification techniques further comprises a plurality of content modification techniques operable to optimize at least one additional visual characteristic of 3D content media, further comprising the steps of, prior to said step (e):

(k) identifying at least one content section of the 3D content media comprising at least one visual characteristic, and selecting at least one corresponding predefined plural content modification technique that is configured for provision of optimum improvement of the 3D experience when applied thereto; and

(l) for each said selected at least one predefined plural content modification technique configured for immediate application to said corresponding at least one content section, applying said selected at least one predefined plural immediate content modificalon technique thereto.

10. The method of claim 9, wherein said step (e) further comprises the step of:

(m) selectively repeating said steps (k) and (l) for at least one additional section of he 3D content media.

11. The method of claim 9, further comprising the steps of, after said step (k) and prior to said step (e):

(n) for each said selected at least one predefined plural content modification technique configured for future application to said corresponding at least one content section, determining a setting for at least one parameter of said selected at least one predefined plural future content modification technique, optimal for application to said corresponding at least one content section; and

(o) associating a reference to said selected at least one predefined plural future content modification technique and said determined at least one optimal parameter, with said corresponding at least one content section.

12. The method of claim 11, wherein said step (e) further comprises the step of:

(p) selectively repeating said steps (n) and (o) for at least one additional section of the 3D content media.

13. The method of lain 11, wherein said at least one 3D content playback system is operable to apply said at least one corresponding predefined plural future content modification technique to at least one predetermined content section of said 3D content media, in accordance with said at least one optimal parameter therefor, further comprising the steps of:

(q) providing said dynamic 3D content media container file, generated at said step (f), to said at least one 3D content playback system;

(r) identifying, by said at least one 3D content playback system in said dynamic 3D content media container file, at least one said associated reference to said at least one corresponding predefined plural future content modification technique, and said determined at least one optimal parameter therefor; and

(s) applying said at least one referenced corresponding predefined plural future content modification technique to at least one predetermined content section of said 3D content media, in accordance with said at least one optimal parameter therefor.

14. The method of claim 13, wherein said step (q) comprises the step of:

(t) streaming said dynamic 3D content media container file, generated at said step (f), to said at least one 3D content playback system from a remote 3D content source.

15. The method of claim 13, wherein said dynamic 3D content media container file is stored on physical media operable to store 3D content media container files, and wherein step (q) comprises the step of:

(u) transmitting said dynamic 3D content media container file, generated at said step (f), to said at least one 3D content playback system from said corresponding physical media.

16. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the at least one data processing system operable to perform said steps (a), (b), (c), (d), and (e), is connected to said at least one 3D content playback system.

17. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said at least one 3D content playback system comprises the at least one data processing system operable to perform said steps (a), (b), (c), (d), and (e).

18. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the at least one data processing system is operable to perform said steps (a), (b), (c), (d), (e), and (f), prior to playback of said dynamic 3D content media container file, further comprising the step of:

(v) after said step (f), storing said dynamic 3D content media container file, on physical media operable to store 3D content media container files, for later payback by said at least one 3D content playback system.

19. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the at least one data processing system is operable to perform said steps (a), (b), (c), (d), (e), and (f), in conjunction with playback of said dynamic 3D content media container file by said at least one 3D content playback system.

* * * * *

US009521390B2

(12) **United States Patent**
Blumenthal et al.

(10) **Patent No.:** **US 9,521,390 B2**
(45) **Date of Patent:** ***Dec. 13, 2016**

(54) **SYSTEM AND METHOD FOR ADAPTIVE SCALABLE DYNAMIC CONVERSION, QUALITY AND PROCESSING OPTIMIZATION, ENHANCEMENT, CORRECTION, MASTERING, AND OTHER ADVANTAGEOUS PROCESSING OF THREE DIMENSIONAL MEDIA CONTENT**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

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(22) Filed: **Oct. 15, 2013**

(65) **Prior Publication Data**

US 2014/0044403 A1 Feb. 13, 2014

Related U.S. Application Data

(63) Continuation-in-part of application No. 12/642,757, filed on Dec. 18, 2009, now Pat. No. 8,558,830, and a

(Continued)

(51) **Int. Cl.**
H04N 13/00 (2006.01)

(52) **U.S. Cl.**
CPC *H04N 13/0018* (2013.01); *H04N 13/0003* (2013.01); *H04N 13/0055* (2013.01); *H04N 13/0059* (2013.01)

(58) **Field of Classification Search**
USPC 345/419, 581, 619
See application file for complete search history.

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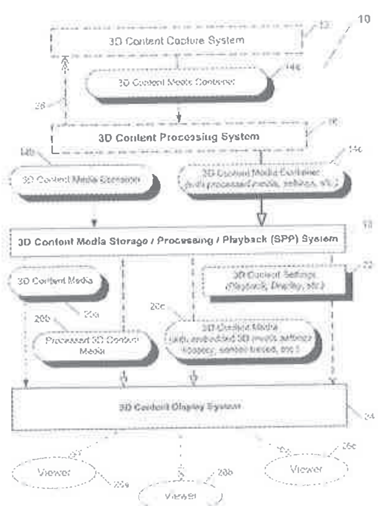
Primary Examiner — Ke Xiao
Assistant Examiner — Jed-Justin Imperial

(57) **ABSTRACT**

In at least one embodiment thereof, the inventive system and method are directed to providing and configuring a novel platform-independent 3D content media container operable to: (1) support and store a 3D content media file with at least one 3D content modification/improvement technique applied to only specific predetermined portions thereof, and (2) selectively enabling particular optimal 3D content-related parameter settings for future application of at least one additional 3D content modification/improvement technique, to likewise be associated with one or more specific corresponding 3D content media file portion(s), and to also be stored in association therewith in the inventive 3D content media container. In at least one additional embodiment thereof, the inventive system and method are capable of determining and implementing various storage, transmittal, and application(s) of 3D content media processing/settings/parameter/profile configuration(s) prior to, or during, display of corresponding 3D content media.

19 Claims, 6 Drawing Sheets



Related U.S. Application Data

continuation of application No. 13/168,252, filed on Jun. 24, 2011, now abandoned, which is a continuation-in-part of application No. 12/642,757, filed on Dec. 18, 2009, now Pat. No. 8,558,830.

(60) Provisional application No. 61/138,926, filed on Dec. 18, 2008.

FIG. 1

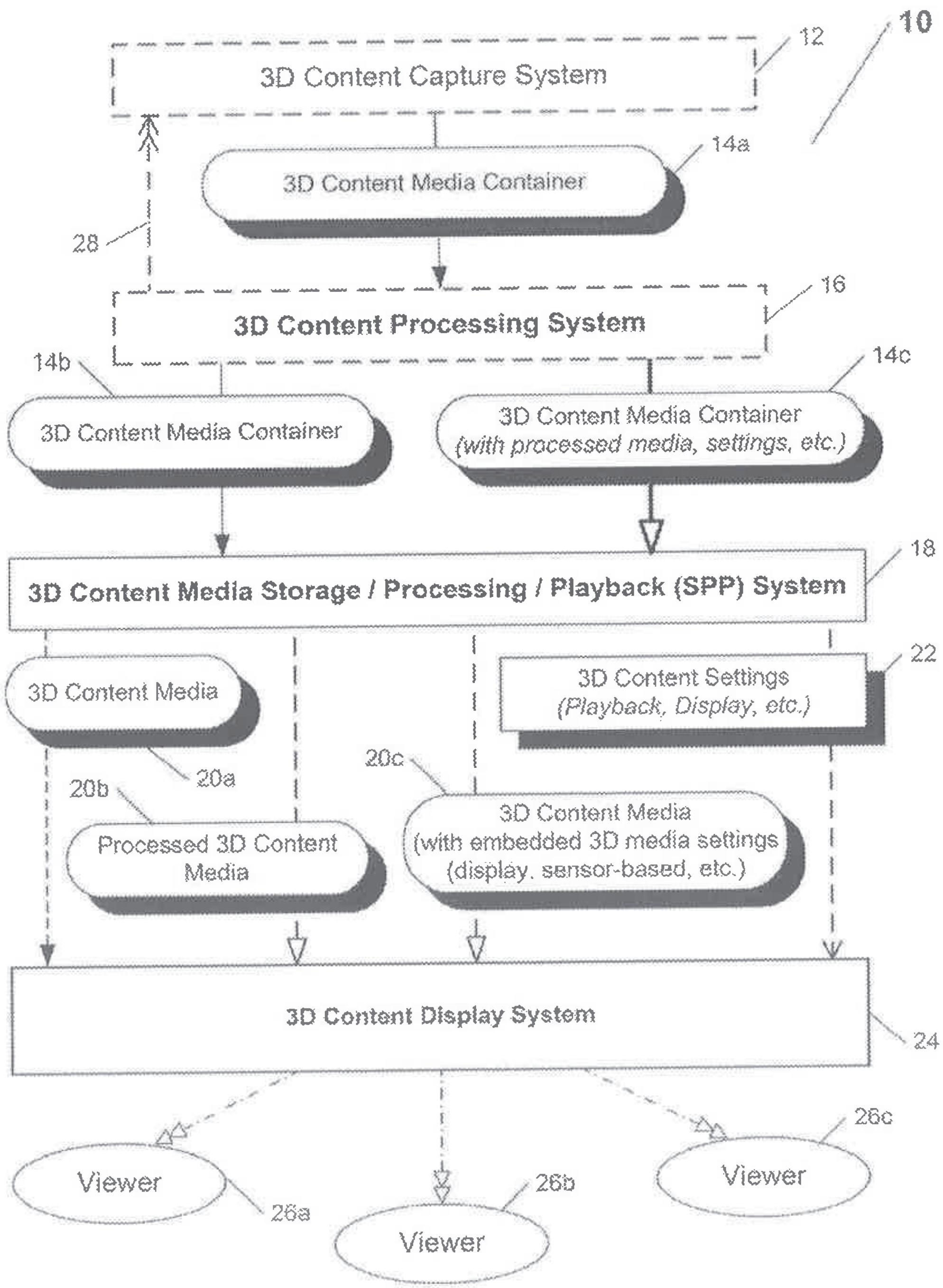

10
3D Content Capture System
12
3D Content Media Container
14a
28
3D Content Processing System
16
14b
3D Content Media Container
14c
3D Content Media Container
(with processed media, settings, etc.)
3D Content Media Storage / Processing / Playback (SPP) System
18
3D Content Media
20a
3D Content Settings
(Playback, Display, etc.)
22
20b
Processed 3D Content Media
20c
3D Content Media
(with embedded 3D media settings
(display, sensor-based, etc.)
3D Content Display System
24
Viewer
26a
Viewer
26b
Viewer
26c

FIG. 2

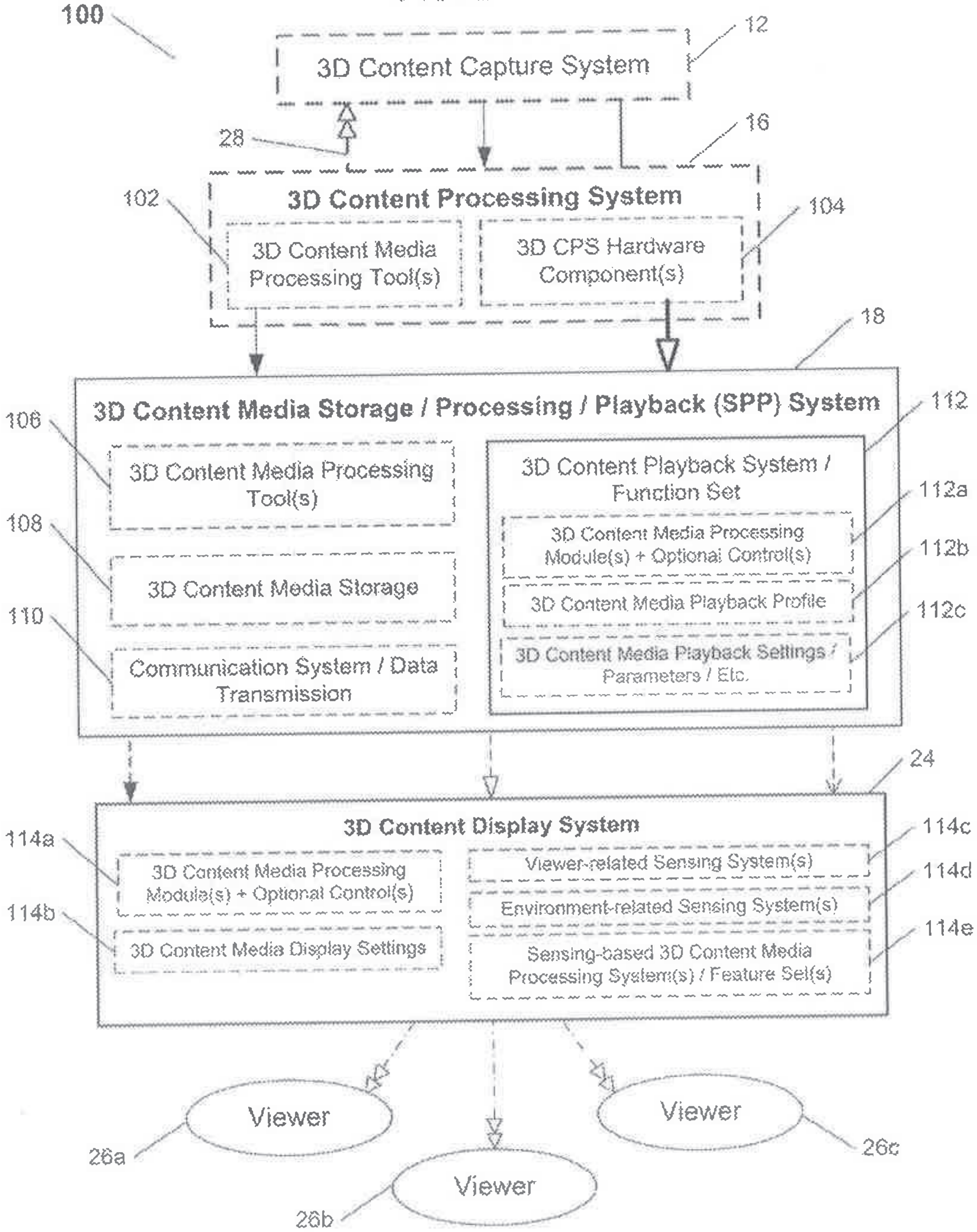

100
12
3D Content Capture System
28
16
3D Content Processing System
102
104
3D Content Media Processing Tool(s)
3D CPS Hardware Component(s)
18
3D Content Media Storage / Processing / Playback (SPP) System
106
3D Content Media Processing Tool(s)
108
3D Content Media Storage
110
Communication System / Data Transmission
112
3D Content Playback System / Function Set
112a
3D Content Media Processing Module(s) + Optional Control(s)
112b
3D Content Media Playback Profile
112c
3D Content Media Playback Settings / Parameters / Etc.
24
3D Content Display System
114a
3D Content Media Processing Module(s) + Optional Control(s)
114b
3D Content Media Display Settings
114c
Viewer-related Sensing System(s)
114d
Environment-related Sensing System(s)
114e
Sensing-based 3D Content Media Processing System(s) / Feature Set(s)
Viewer
26a
Viewer
26b
Viewer
26c

FIG. 3

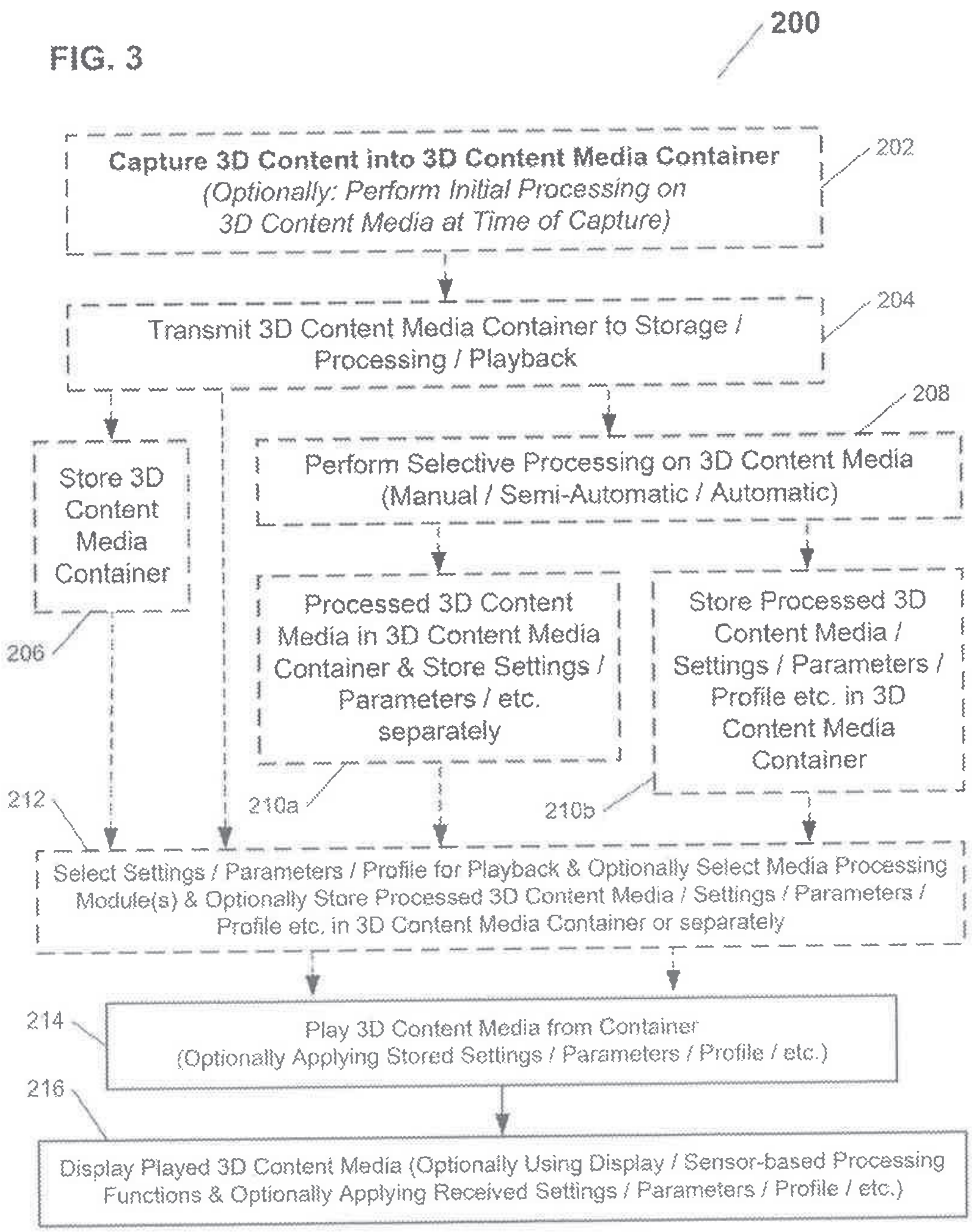

200
Capture 3D Content into 3D Content Media Container
(Optionally: Perform Initial Processing on
3D Content Media at Time of Capture)
202
Transmit 3D Content Media Container to Storage /
Processing / Playback
204
Store 3D
Content
Media
Container
206
Perform Selective Processing on 3D Content Media
(Manual / Semi-Automatic / Automatic)
208
Processed 3D Content
Media in 3D Content Media
Container & Store Settings /
Parameters / etc.
separately
210a
Store Processed 3D
Content Media /
Settings / Parameters /
Profile etc. in 3D
Content Media
Container
210b
212
Select Settings / Parameters / Profile for Playback & Optionally Select Media Processing
Module(s) & Optionally Store Processed 3D Content Media / Settings / Parameters /
Profile etc. in 3D Content Media Container or separately
214
Play 3D Content Media from Container
(Optionally Applying Stored Settings / Parameters / Profile / etc.)
216
Display Played 3D Content Media (Optionally Using Display / Sensor-based Processing
Functions & Optionally Applying Received Settings / Parameters / Profile / etc.)

FIG. 4A

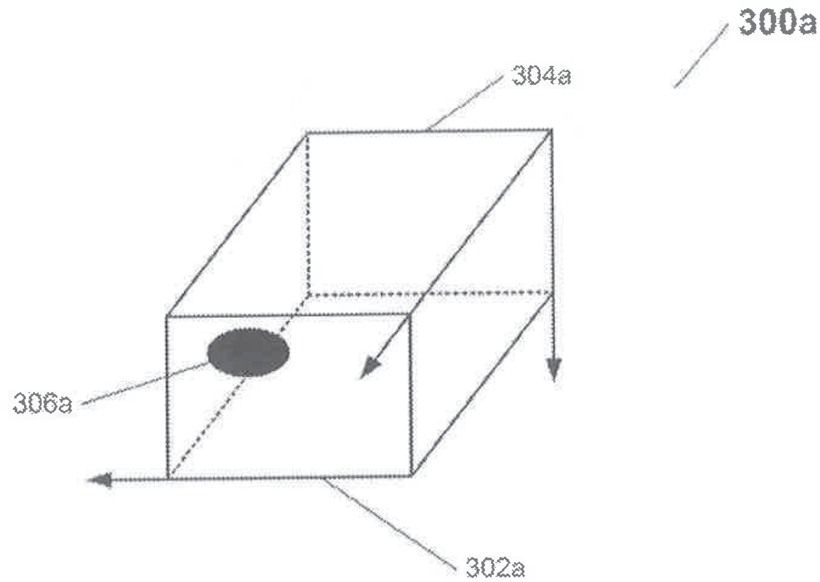


FIG. 4B

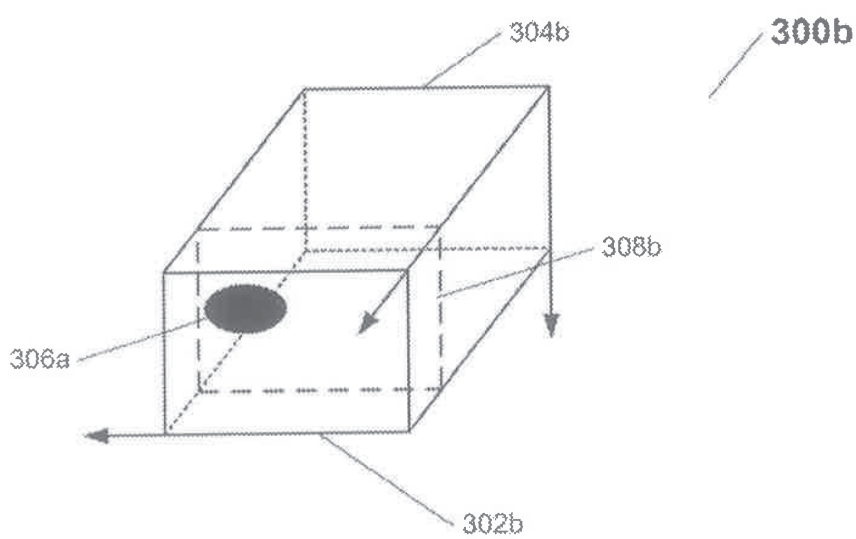


FIG. 4C

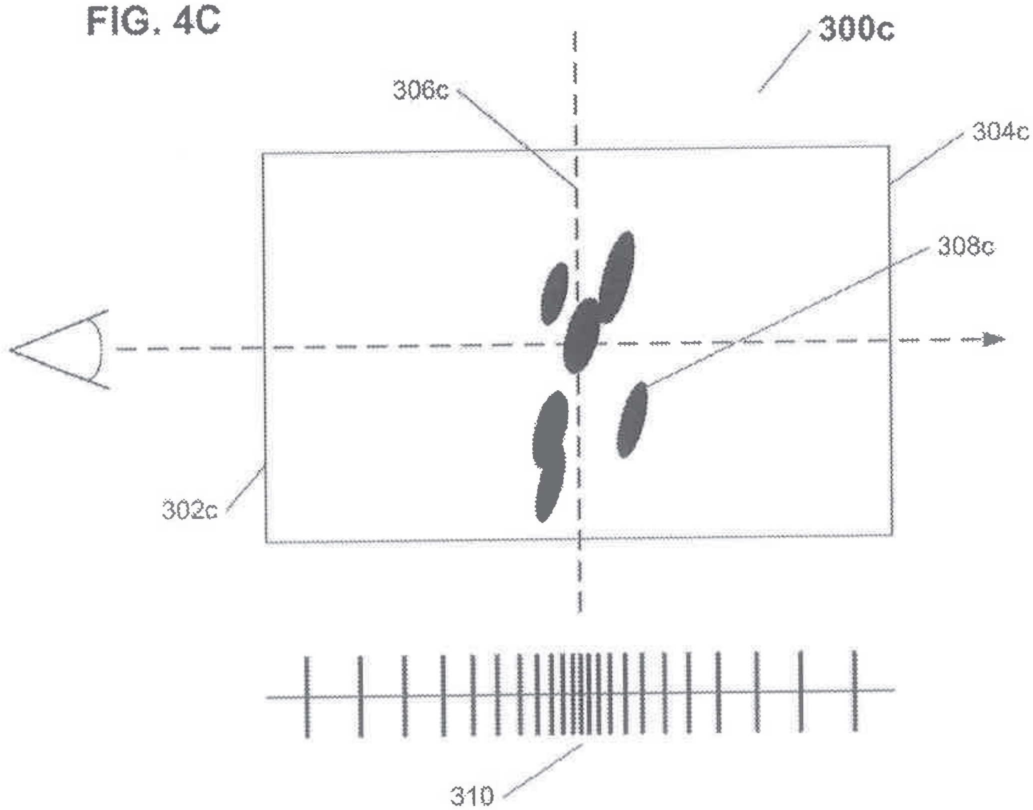
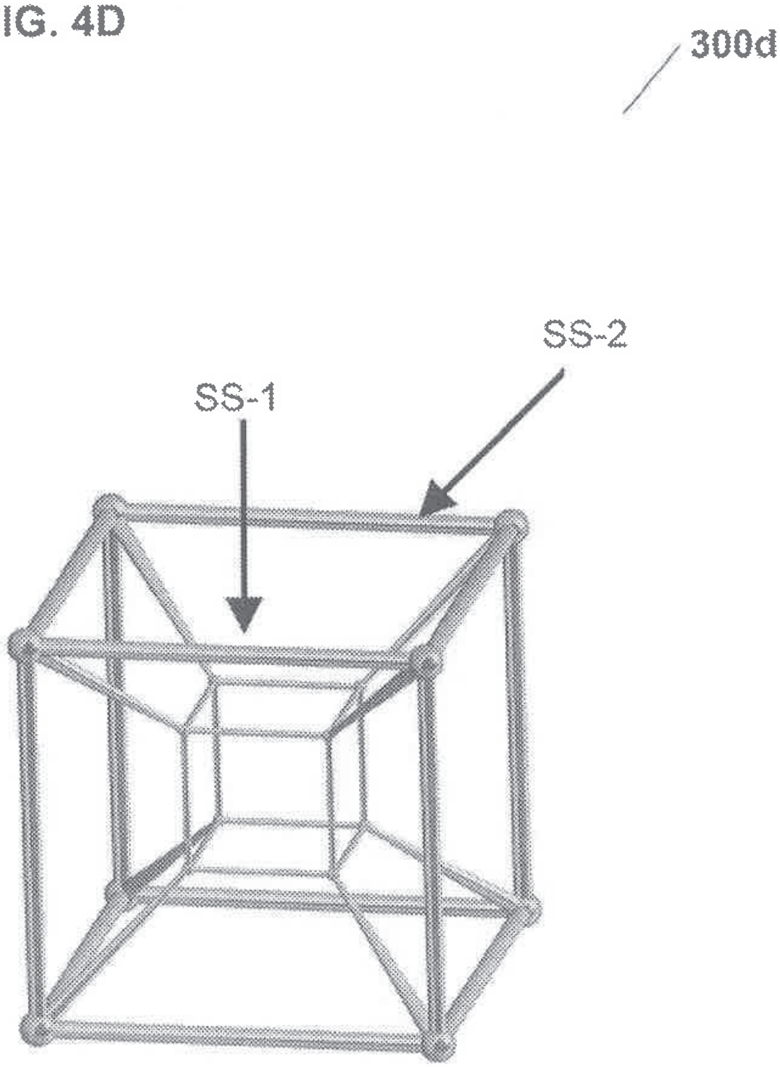


FIG. 4D



SYSTEM AND METHOD FOR ADAPTIVE SCALABLE DYNAMIC CONVERSION, QUALITY AND PROCESSING OPTIMIZATION, ENHANCEMENT, CORRECTION, MASTERING, AND OTHER ADVANTAGEOUS PROCESSING OF THREE DIMENSIONAL MEDIA CONTENT

CROSS REFERENCE TO RELATED APPLICATIONS

The present patent application is a continuation-in-part of, and claims priority from, the commonly assigned co-pending U.S. patent application Ser. No. 12/642,757 entitled "System and Method For Adaptive Scalable Dynamic Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering, And Other Advantageous Processing of Three Dimensional Media Content", filed Dec. 18, 2009, which in turn claims priority from the commonly assigned U.S. Provisional Patent Application Ser. No. 61/138,926, entitled "System and Method For Adaptive Scalable Dynamic Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering, And Other Advantageous Processing of Three Dimensional Media Content", filed Dec. 18, 2008. The present application is also a continuation of, and claims priority from the commonly assigned co-pending U.S. patent application Ser. No. 13/168,252 entitled "System and Method For Adaptive Scalable Dynamic Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering, And Other Advantageous Processing of Three Dimensional Media Content", filed Jun. 24, 2011, which in turn claims priority from the commonly assigned co-pending U.S. patent application Ser. No. 12/642.757 entitled "System and Method For Adaptive Scalable Dynamic Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering And Other Advantageous Processing of Three Dimensional Media Content", filed Dec. 18, 2009, which in turn claims priority from the commonly assigned U.S. Provisional Patent Application Ser. No. 61/138,926, entitled "System and Method For Adaptive Scalable Dynar is Conversion, Quality and Processing Optimization, Enhancement, Correction, Mastering, And Other Advantageous Processing of Three Dimensional Media Content", filed Dec. 18, 2008.

FIELD OF THE INVENTION

The present invention relates generally to systems and methods for improving the 3D experience provided by playback and display of 3D media content, and more particularly to systems and methods for providing 3D content mediacentric solutions that greatly improve the quality and impact and other desirable features of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and 3D media display solutions, thus maximizing the 3D experience produced therefrom.

BACKGROUND OF THE INVENTION

Various tools for capturing, generating, processing, playing back and displaying three dimensional (3D) content media (especially motion video), have been available for quite some time. Display technologies for 3D content media in particular have evolved quite a bit from the earliest barely passable offerings which required the audience to wear flimsy "glasses" provided with a different (red or blue) lens for each eye, to more advanced electronic "stereoscopic 3D" glasses equipped with remotely triggered liquid crystal display (LCD)-based lenses (acting as alternating individually controlled "shutters"), which provided its wearers with an engaging and quality "3D experience", given properly prepared 3D content media paired with the appropriate playback and corresponding display technologies working on conjunction with the 3D glasses.

However, this approach for providing a "3D experience" is quite cumbersome and very expensive to use and maintain, and has thus been of very limited commercial success, primarily being relegated to special entertainment venues, such as certain IMAX theaters and high-end amusement parks. In addition to expensive, and relatively fragile, glasses being required for each member of the audience (which in some cases excludes those who cannot comfortably wear them), the latest stereoscopic 3D solutions require sophisticated and expensive computer-based components for storing and processing the 3D content, as well as similarly complex and expensive electronic components for displaying the 3D content and remotely controlling the stereoscopic 3D glasses.

Of course, as is expected, the very limited availability and expense of the above 3D content media playback and display technologies, in particular, have led to a relative lack of interesting 3D content (due to the expense in its creation and the very limited commercial interest therein), which in turn has resulted in a very limited availability of 3D content capture and processing tools, thus essentially resulting in a "vicious cycle".

Nonetheless, in recent years, there has been a revolutionary leap in the solutions being offered for displaying 3D content media. Specifically, a number of companies, have developed and offered flat panel displays of varying sizes capable of creating a virtual 3D experience for the viewer without the need for the viewer to wear electronic or other types glasses or similar devices. Moreover, these displays do not require other specialized equipment and can work with specially configured 3D content that may be stored on, and played back from, conventional readily available computers. And, while these displays are still quite expensive, they are priced within reach of most organizations (and within reach of some consumers), with the price certainly poised to decrease exponentially, commensurate with an increase in production (as has been the case with the HDTV flat panel display market).

Therefore, for the past several years, ever since these newest stand-alone 3D ("SA-3D") content media display technologies have become available at relatively reasonable prices, there has been a widespread consensus that proliferation of three-dimensional (3D) content media (both in entertainment and in advertising), as well as of the hardware and software technologies necessary for SA-3D content capture, processing, playback, and display, is inevitable, and that the market for 3D-related technologies will experience explosive growth.

Nevertheless, to date there has not been a dramatic push forward that would make the above predictions become reality. One of the main reasons for this aforementioned lack of the expected proliferation of commercially successful SA-3D-related content, software and hardware offerings, is the fact that although these newest SA-3D content media display technologies have a number of very significant advantages over all previously known 3D-related offerings, they also suffer from a number of flaws. Specifically, on the average, the quality and impact of the 3D experience delivered by the available SA-3D solutions is lower than that of

conventional high-end glasses-based stereoscopic 3D offerings. Moreover the relative position of each viewer to the SA-3D screen (in terms of vertical and horizontal viewing angles, distance, etc.) has significant impact on that viewer's overall 3D experience when viewing the displayed SA-3D content. Moreover, the existing SA-3D hardware and software solutions for the capture, processing, playback and display of 3D content media have focused on areas of expertise, offer individual and discrete benefits in various narrow aspects of 3D and SA-3D technologies with little or no regard for the offerings of other solution providers, resulting in literally dozens of incompatible proprietary software and hardware products with nothing to tie them together.

It would thus be desirable to provide a system and method directed to one or more modular unifying scalable solutions, preferably implemented in a configurable infrastructure, that greatly improve the quality and impact of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions. It would further be desirable to provide a system and method capable of achieving the above goals by selectively performing 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure from 3D content capture to 3D content media display. It would moreover be desirable to provide a system and method capable of determining and implementing selective or optimal storage, transmittal, and application(s) of 3D content processing/settings parameter/profile configuration(s) prior to display of corresponding 3D content media to one or more viewers thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, wherein like reference characters denote corresponding or similar elements throughout the various figures:

FIG. 1 is a schematic block diagram of an exemplary embodiment of the inventive scalable modular infrastructure for selectively implementing, configuring, and managing various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantage s processing and/or configuration;

FIG. 2 is a schematic block diagram of exemplary embodiments of various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantageous processing and/or configuration, that may be implemented in the novel infrastructure of FIG. 1;

FIG. 3 is a process flow diagram of an exemplary embodiment of the inventive process, that may be performed in whole, or selectively in part, by at least one component of the inventive system of FIG. 2, or that may otherwise be implemented in one or more components of the novel infrastructure of FIG. 1; and

FIGS. 4A-4D are various views of a schematic representation of an exemplary 3D media content volume structure that may be utilized in conjunction with various embodiments of the present invention of FIGS. 1 to 3, and illustrate a varying 3D spatial volume which contains at least one object of interest to the viewer of the 3D media content displayed therein.

SUMMARY OF THE INVENTION

The present invention is directed to a system and method for providing 3D content-centric solutions that greatly improve the quality and impact of 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and display solutions, thus maximizing the 3D experience produced therefrom. The novel system and method accomplish these goals by providing modular unifying scalable 3D content-centered solutions, preferably implemented in a configurable infrastructure, that improve the quality and impact of any 3D rrredia content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions.

The inventive system and method advantageously enable automatic, semi-automatic or user-controlled selective performance of 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure (from 3D content capture, to 3D content processing (and/or 2D to 3D content conversion), and to 3D content media display), and in at least one embodiment thereof, the inventive system and method are capable of determining and implementing selective or optimal storage, transmittal, and application of 3D content processing/settings/parameter/profile configuration(s) prior to, or during, display of corresponding 3D content media to one or more viewers thereof.

Other objects and features of the present invention will become apparent from the following detailed description considered in conjunction with the accompanying drawings. It is to be understood, however, that the drawings are designed solely for purposes of illustration and not as a definition of the limits of the invention, for which reference should be made to the appended claims.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The system and method of the present invention, address all of the disadvantages, flaws and drawbacks of all previously known 3D-related hardware and software offerings, by providing novel 3D content media-centric solutions that greatly improve the quality and impact of any 3D media content, while advantageously decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and 3D media display solutions, thus maximizing the 3D experience produced therefrom for one or more viewers.

The novel system and method accomplish the above goals by providing modular unifying scalable 3D content-centered solutions, preferably implemented in a configurable infrastructure, that greatly improve the quality and impact of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions.

In various exemplary embodiments thereof, the inventive system and method advantageously enable automatic, semi-automatic or user-controlled selective performance of 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure (from 3D content capture to 3D content media display), and in at least one embodiment thereof, the inventive system and method are capable of determining and implementing selective or optimal storage, transmittal, and application(s) of 3D con-

tent processing/settings/parameter/profile configuration(s) prior to display of corresponding 3D content media to one or more viewers thereof.

It should be noted that current 3D media content capture, processing, playback and display solutions take the "lowest common denominator" approach to applying playback/display optimization and related settings (intended to improve the appearance, quality, impact and overall "3-D Experience") to the 3D content media being displayed to at least one viewer thereof. This is very problematic because the desirable settings and parameters, as well as the necessary processing power and other requirements, for optimizing and maximizing the quality, impact and overall 3-D experience level for any displayed 3D media content, vary greatly between different 3D content media files, and even between different segments/portions within any particular 3D content media file itself. In particular, these variations largely depend on the specific 3D scenes being shown (i.e., on the depicted objects/subjects, their relative motion, complexity, backgrounds, lighting, etc.), and on other external factors, such as the original 3D content capture and/or conversion parameter settings, the capture hardware used, the current display, and even on the viewers' relative position (orientation, elevation, distance, etc.) thereto.

Finally, prior to discussing the various embodiments of the present invention in greater detail below, it is important to note that while many of the embodiments of the present invention (and the various novel tools, techniques and processes relating thereto), are described and discussed as being implemented and/or utilized in the field of 3D visual entertainment (film, television, games, etc., all embodiments of the inventive system and method, can be readily and advantageously utilized in virtually any scientific, military, medical, forensic, or industrial application based on, or involving 3D visualization or display and/or manipulation of 3D content medial, as a matter of design choice, without departing from the spirit of the invention.

Referring now to FIG. **1**, an exemplary embodiment is shown of an inventive scalable modular infrastructure **10** for selectively implementing, configuring, and managing various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantageous processing and/or configuration.

The infrastructure **10** includes optional components **12** and **16** (3D content capture system **12**, and 3D content processing system **16**) for selectively capturing and optionally processing 3D content media prior to placing it into a 3D content media container (e.g., file, stream, etc.). The infrastructure **10** also includes a 3D content media storage/processing/playback SPP system **18**, operable to selectively store, process, and/or play back 3D content media from a medial container that may be received from components **12** and/or **16**, or that may be delivered from another 3D content media source (such as media converted from another 3D format, or from non-3D content source).

The SPP system **18** preferably communicates with a 3D content display system **24**, operable to display 3D content media (in one or more configurations, and capable of displaying/utilizing at least one of: unprocessed 3D content media **20***a*, processed 3D content media **20***b*, optimized 3D content setting for use with other 3D media content received from a source outside of the infrastructure **10**, etc.) to at least one viewer (e.g., to viewers, **26***a*-**26***c*).

In at least one embodiment of the present invention, the 3D content processing system **16** may also optionally comprise at least one 3D content processing feature/function that is optimized for utilization in conjunction with the 3D content capture system **12**. For example, in one embodiment of the infrastructure **10**, the 3D content capture system **12** may actually be a conventional or a modified 3D content capture system, that is provided with additional necessary features (such as scene/visual field depth mapping (or equivalent capabilities) to enable dynamic (and optionally "on the fly") capture of 2D content, plus sufficient depth (and/or related non-image) information that is sufficient to enable the systems **12** and **16** to produce desirable 3D content for delivery to the SPP system **18**. An exemplary embodiment of operation of the infrastructure **10** is discussed in greater detail in conjunction with FIG. **3**.

Referring now to FIG. **2**, various exemplary embodiments of the possible components of an inventive system **100**, that may be implemented in the inventive infrastructure **10** of FIG. **1**, operable to selectively provide adaptive scalable modular functions related to 3D content media capture generation, quality/processing optimization enhancement, correction, mastering, and other advantageous processing and/or configuration, that may be implemented in the novel infrastructure **10** of FIG. **1**. Preferably, one or more of the components (**12**, **16**, **18**, and **24**), and subcomponents (**102** to **114***e*) of the inventive system **100**, are capable of performing one or more steps of an exemplary novel process **200** of FIG. **3**.

Referring now to FIG. **3**, an exemplary embodiment is shown as a process flow diagram of an exemplary embodiment of the inventive process, with steps **202** to **216**, that may be performed in whole, or selectively in part, by at least one component of the inventive system **100** of FIG. **2**, or that may be implemented in one or more components of the novel infrastructure **10** of FIG. **1**.

In summary, the inventive system **100** (through selective operation of one or more components thereof, as may be implemented in infrastructure **10** of FIG. **1**), in additional exemplary embodiments thereof, preferably associates at least one predetermined 3D content improvement ("3DCI") parameter set (optimization playback, and/or display settings and/or parameters, selection of one or processing modules and/or stages of use thereof (or example during one or more of: capture, post-processing, playback or display), display tool adjustments, etc.), with 3D media content containers.

In at least one embodiment thereof, the optimal 3DCI parameter set comprises a plurality of "static to dynamic" display tools adjustments, which may be advantageously recorded and/or otherwise embedded in the 3D content media file, to thereby become a permanent feature thereof during later playback and/or processing (e.g., post production, etc.) of the 3D content media. In another embodiment of the present invention, the optimal 3DCI parameter set integration technique may also be utilized as a playback feature which is interpreted by a proprietary software and/or hardware 3D media player (which, by way of example can be configured as a "set top box" or equivalent, for 2D to 3D content conversion, playback of "enhanced" 3D content media having an integrated 3DCI parameter set, and for other functions (such as utilization of de-encryption solutions for playback of protected 3D content media.

Advantageously, this association and/or linking, occurs on a scalable basis from the most basic level at which an optimal 3DCI parameter set is associated with one or more corresponding 3D content media containers (that may be in a container directory, a playlist, a queue, or in a similar storage container), such that the appropriate 3DCI parameter

set is activated in conjunction with its corresponding 3D content media from the container being played, to a more advanced level at which different 3DCI parameter sets are associated with (or otherwise linked or assigned to), the appropriate different portions of each 3D content media container, such that during playback and/or display thereof, different sections of the displayed content receive the optimal level of "treatment".

In one exemplary embodiment of the present invention, the above-described techniques may be readily implemented in a media player (e.g., software based or otherwise), operable to process and play back a 3D media content clip, and which is operable to enable an operator thereof to (1) exercise full control over adjustments to 3DCI parameters on a scalable/variable granularity basis (ranging from a portion of a single content frame to a scene formed from a plurality of sequential frames, and (2) embed various settings and parameters (e.g., even data points of DCT (discrete cosine transform) settings), and automatically imbed them in the 3D media content clip for later optimized playback.

Advantageously, the novel media player is further operable to enable the operator to run a 3D media content clip, stop at a particular frame, apply predefined (e.g., DCT) adjustments and record them in the clip, such that the adjustment is automatically carried forward through the clip until the operator tops at a the next frame which requires a different adjustment, or the clip ends.

The novel system and method advantageously address and cover both the creation/determination/configuration of various scalable 3DCI parameter sets during 3D content capture, during initial processing, at any other time up to and including on-the-fly during playback, or any combination of the above, as a matter of design choice without departing from the spirit of the invention. Similarly, the process of creation/determination/configuration of the 3DCI parameter sets can be wholly or partially automated, or can be manually performed as a "creative process" by one or more content professional, preferably utilizing one or more 3DCI tools and support modules as desired or as necessary.

For example, tools utilizing novel dynamic and adaptive variable 3D depth and layering techniques of the present invention (i.e., Depth Based Image Rendering or "DBIR" techniques), may readily be used for both automated and content professional-directed 3DCI parameter creation (e.g., the 3DCI may include desired depth adjustment parameters, variable layer densities centered on certain displayed objects or object types, dynamic variable resolution based on relative distance of the closest object depth layers to the viewer, etc.).

The 3DCI parameter sets ray be linked to, or otherwise associated with the respective 3D content media containers (or portions thereof), and may thus be stored in dedicated or other form of files, containers or libraries, separately from the 3D content media containers, or may be stored within the 3D content media containers, (e.g., embedded therein, as discussed above).

The inventive system **100** (through selective operation of one or more components thereof, as may be implemented in infrastructure **10** of FIG. **1**, for example in accordance with the process **200**, or otherwise) in various additional exemplary embodiments thereof is operable to provide selective, automatic, or user-controlled dynamic adaptive/scalable utilization of layered depth measurement/mapping (e.g., DBIR) techniques in 3D content media, coupled it) with techniques for identifying and spatially (3D) tracking static and moving displayed objects in the depth mapped layered

scenes to provide the desired optimal level of at least one predefined aspect of 3D content experience.

In various exemplary embodiments thereof, the system and method of the present invention advantageously comprise the utilization of at least one of (and preferably both) the following novel 3DCI methodologies (that may be implemented utilizing one or more of various suitable 3D content processing techniques): (1) Dynamic Volumetry, and (2) Viewer Perception Enhancement, each described in greater detail below.

When presenting 3D content using a digital display or a projector, the challenge is not only to separate the elements of the content into a spatial continuum ranging from foreground to background, but also to reproduce correctly the viewer perspective that would naturally proceed from the action on screen. This is true for both content originally captured in 3D and for content converted from an original 2D source.

When presented with a visual field containing many objects, the observer will isolate the objects and focus on a specific one or few in order to better interpret the action within the field. The process of separation is based on many criteria/properties such as colour, brightness and relative motion. Once the objects have been separated, the observer's primary focus is chosen. Following that choice, a different set of perceptual algorithms is used to track the action within the scene. The centre of interest is maintained in tight focus and other elements of the image which are closer, farther or moving at a different rate are defocused. Thus, in order to improve the 3D effect of any digital display, the system used must not only manage the correct definition of varying spatial relationship between image elements, it must also generate the presentation in accord with the environmental conditions of the display and the perceptual expectations of the viewer.

Essentially, there are two broad categories of activity that take place within any 2D-to-3D video transformation pipeline:

(A) Conversion: Development of a series of data which describe the calculated XYZ position of picture elements present within each frame of the video; and

(B) Presentation: A mathematical process that shows the viewpoint of picture elements from different perspectives. (For example: Two views are required for stereoscopic and 9 or more for ASD presentations).

Each of the above activities is performed at a different time & place. Conversion is a complex process, typically performed one time only for any given piece of content, whether live or off-line. The conversion process is usually performed in a studio or using a separate real-time technology module (in the case of live conversion). The Presentation processes involve different calculations that are performed at each viewing time on equipment located at the viewing position. In addition to the methods required to reproduce the basic sub-images inherent to the 3D presentation technology, the images must be adjusted according to viewer and site-based parameters such as specific output technology, venue physical format, ambient light conditions and viewer position/preference.

Dynamic Volumetry refers to the process of adjusting the generation of the 3D images to compensate for the parameters related to the spatial relationship between elements within a series of images comprising one or several 3D scenes. Referring now to FIGS. **4A** to **4D**, an exemplary embodiment of the inventive Dynamic Volumetry methodology is shown. FIGS. **4A** to **4D** show varying volumetric 3D spaces **300***a*-**300***d*, which contain a range of objects of

interest **306***a* to **306***c* arranged from foreground to background. At different times in the video sequence, the volume or scale on any or all of the axes will change to allow a reasonable discrimination of the objects of interest. Additionally, the system performs the sub-image generation with a focus set in a plane containing the centre of perceived action. FIG. **4A** shows a spatial volume ranging from foreground **302***a* to background **304***a* and including an object of interest **306***a*

FIG. 4B shows a Perception Focus Plane **308***b* At T_0 and a Primary object of Interest (Perception Focus) **306***b*. The positioning of the focus plane is dynamically adjusted to center on the objects or zone with maximum relation to the action within the image sequence thus permitting the system to display the greatest degree of 3D separation.

FIG. **4C** shows a side view of 3D space and Primary object of Interest **306***c*. (Perception Focus). Spatial data information can be linear across the space (foreground to background) or non-linear thus permitting the system to display the greatest degree of 3D separation around the area of maximum interest or action.

FIG. **40** shows Scene Space at T_0 (SS-1) to Scene Space at T_{0+n} (SS-2). The volume of the space is adjusted dynastically to allow the background and foreground to be imaged in such as way as to always include or exclude the zone of maximum interest with the greatest degree of 3D separation.

Presentation processes involve different calculations that are performed at each viewing time on equipment located at the viewing position. In addition the methods (described above) required to reproduce the basic sub-images inherent to the 3D presentation technology, the images must be adjusted according to viewer and site-based parameters such as specific output technology, venue physical format, ambient light conditions and viewer position/preference.

The inventive system and method dynamically modifies a series of coefficients/formulae affecting the presentation rendering of a data file containing and describing the sub-elements of an image sequence (video stream) in such a way as to emulate the natural interest and perception of a view when exposed to a real environment. The modifications may be based on variables such as the following:

Environment Specific:
Viewer position
Ambient lighting
Presentation equipment technology
Content Specific:
Foreground/background separation
Primary activity focus position
Overall scene topography
Topography of preceding and following scenes

Dynamic adjustments will be at frame speed and may impose specific adjustments for a single scene, a single frame, or an interpolated sequence of adjustments including linear and non-linear transforms between specified points of interest, whether scene-based or not.

Advantageously, in accordance with the present invention, the novel system **100** preferably comprises sufficient hardware and/or software components and subcomponents to provide and utilize one or more of the following advantageous and novel functionalities/techniques which are contemplated by the present invention in implementing various embodiments and aspects of the inventive Dynamic Volumetry methodology:

1) Automatic/Adaptive Depth Layer Acquisition: Utilization of existing 3D field depth-detection cameras (and related and/or substantially equivalent hardware) during the 3D content capture/acquisition stage (or, as may be applicable during the initial intake stage of 2D content to be converted to 3D), to acquire a predetermined number of depth layers for the 3D content to form the desired layered "depth field environment" for each 3D content frame/scene, etc., which may be the same depth quantity for the entire container, or which, in accordance with the present invention, may dynamically, adaptively or selectively vary for different portions of the content (for example pursuant to one or more predetermined depth later variation profiles).
2) Dynamic Layer Density Assignment: Assignment of predetermined amounts of layers to various displayed objects in the 3D content being captured and/or converted. Optionally, the assignment process may utilize variable layer density (e.g., depending on relative depth of different parts of the objects). Alternately, an object's layer density distribution (or profile) may be shifted/adjusted dynamically as the object moves within the depth field.
3) Dynamic Focal Layer Determination/Tracking: Determination, tracking and use of at least one variable dynamically determined/adaptive "focal" layer (i.e., everything behind the focal layer needs less detail and less layer density, anything close needs more) for entire scenes, or for portions thereof.
4) Dynamic Multi-Layer Focal Objects/Scenes Determination/Tracking: Determination, tracking and/or use of different variable dynamically determined/adaptive "focal object" plural layers assigned to one or more objects in various 3D content scenes, and that can move to different depths depending on relative depth positions of the assigned object, thus enabling variable layer density across objects (essentially providing, to the inventive system **100**, a control protocol for simplified manipulation of an object's depth layer distribution).
5) Assignment of Variable Spatial Resolution to Objects: In conjunction with one or more of the various features above, utilization of a mixture of different image resolution magnitudes (pixel density, etc.), and/or optionally of related image processing (anti-aliasing, etc.), for portions of objects/scene regions in an optimized manner (for example, by processing/displaying higher resolutions for those object layers that are closest to the viewer (or that otherwise would benefit from additional detail)).
6) Geospatial External Calibration: Optionally, maintaining a selected level of "geospatial accuracy" with external calibration distance points or with internal software reference markers, enables visual depth adjustment to precise geo-spatially accurate images to be accomplished to a degree as may be desired (or necessary) for one or more 3D content applications up to, and inclusive of, extremely dense layering across each 3D content scene and/or object(s) (for example as may be required for military, scientific, and/or medical applications, etc.).
7) Application of Dynamic Geospatial Survey Solutions in 3D Media Content Context: Utilization and/or adaptation of various advantageous geo-centric survey depth (elevation) mapping techniques and methodologies to various DBIR techniques utilized in accordance with the present invention, preferably with additional modifications applied thereto, to make them dynamic, adaptive, and highly configurable.
8) Additional Novel Tools and Techniques: Selective configuration, implementation, and use of various addi-

tional features including, but not limited to: dedicated 3D processing (D3DP) hardware (e.g., "black box") re-mastering/editing tools, depth correction techniques, various display/media player modules and editing tools, streamlining D3DP hardware rendering conversion processes (e.g., grayscale values to corresponding layer depth locking, and later image depth manipulation correction/optimization via grayscale value adjustments, etc.), and so forth.

It should also be noted that the various embodiments of the inventive system and method, can be advantageously configured, and/or adapted, to utilize and/or combine the very best of currently available (as well as any future) 3D-related solutions in an interoperable manner, that is as transparent as possible to the end user (whether the user is in the field of 3D content creation, or is part of the 3D content audience).

By way of example, the present invention may be implemented, in whole or in part, in connection with, or utilizing a 2D to 3D video conversion server (3DVC server), utilizing various additional applications and software-based tools. This technique may employ a variety of commercially available software tools designed to provide for some specific 2D to 3D conversion techniques such as separate interval field sequential frame grabbing, and thereafter mixing of the subsequent frames to create a depth map based on horizontal motion (which in itself is a sub-standard 3D conversion technique). However, when this approach, is integrated with a variety of other compatible 3D content enhancement techniques, and further assisted/upgraded by the aforementioned inventive system features and tools, it may be configured and implemented to perform at a substantially higher standard of 3D depth conversion, using one or more suitable DBIR solutions, and therefore become an excellent candidate for an inexpensive and easily to use basis for a Broadcast Quality 3D video standard. It should be noted that the opportunity to integrate a number of commercially available 2D to 3D video depth conversion methodologies with a 3DVC server exists only as a consequence of the implementation of the various novel depth mapping correction and relating techniques of the inventive system **100**.

Therefore, the combination of the various commercially available 3D-related tools in concert with a 3DVC server, a media player, the various novel post-processing and display tools of the present invention, unexpectedly and advantageously resulted in the discovery of a completely unique and new process of image correction, 3D depth mapping, and depth impact optimization, that, when properly used and configured in accordance with the present invention are capable of elevating conventional 2D+Depth (i.e., DBIR) 3D media to Broadcast quality.

The various inventive depth mapping solutions and novel techniques, when applied to 3D content media provided by a conventional 3D 3DVC, unexpectedly result in a "remastering" of the 3DVC server, thus constituting an entirely new commercial application of a conventional 3D technology package "fused" with various novel solutions offered by the present invention, and therefore providing a breakthrough opportunity to produce 3D 2D+Depth stereoscopic 3D content media having maximum depth 3D visual impact, but without distracting visual artifacts.

In addition, it should be noted that while a conventional 3DVC server is most commonly used to convert 2D content to 2D+Depth 3D content utilizing one or more DBIR techniques, it is also capable of converting dual path stereoscopic optical signals to a 2D+Depth format (or equivalent thereof), and is also capable of converting stereoscopic side-by-side and field sequential stereoscopic 3D video, into a 2D+Depth format (or equivalent thereof). Fortunately, the various techniques and solutions of the present invention are fully applicable for advantageous utilization in connection with any and all of the aforementioned conversion formats which are supported by the 3DVC server.

Essentially the system and method of the present invention have gone one step further and readily serve as a basis for producing a 3D software solution (that may be optionally augmented with, or replaced by, a hardware component) that is capable of grabbing stereoscopic pairs from a nine multiview 2D+Depth conversion, and reformatting them back into a side-by-side, or a dual-path conventional 3D signal, for viewing the reformatted 3D content media using stereoscopic 3D glasses. Accordingly, the inventive techniques close the loop, and allow the use of a conventional 3DVC server to convert 2D content media not only into a 2D+Depth format, utilizing one or more DBIR techniques, but to also automatically convert 2D content media into highly desirable and commercially viable stereoscopic 3D medial content that is necessary for all 3D glasses-based display systems, large and small, thereby enabling a highly attractive and cost effective solution to be offered during the inevitable transition between from 3D glasses-based display systems to ASD systems.

When the above-described combined technology package (hereinafter referred to as a "3DF-3DVC system") is used with conventional and/or novel 3D display tool adjustments and settings, (which, in accordance with the present invention may be readily embedded into a 3D content media file (and optionally recorded/captured "on-the-fly")), the resulting output not only corrects any remaining 3D video image issues/flaws, but will at the same time provide the basis for development and implementation of various guidelines and tools for rapidly effecting a major increase in the impact of the depth perspective visuals in the display of various available and future 3D content media, thus establishing the methodology and infrastructure that is required for widespread production and proliferation of 3D stereoscopic video broadcast quality standards.

For example, various inventive 3DF-3DVC system techniques may be employed in all of 3DVC server applications to effectively upgrade the 3D content media quality through "Re-mastering". When these techniques are applied to preconverted 2D+Depth, s3D 3D video clips, which may have been produced utilizing one or more DBIR techniques, and designed for display on conventional commercially available 3D ASD screens, advantageously, the issues of depth error correction, cone double image removal and ghosting artifacts may be corrected, and therefore eliminated.

As a result, in view of all of the above, the use of various embodiments of the inventive system and method (or of portions thereof), enables companies to offer, and consumers and other end-user parties to experience, 3D content media in a very cost-effective and efficient manner, thus overcoming the flaws and drawbacks of all prior 3D-related offerings that served as barriers to the well-deserved success of the 3D media experience market, and making inexpensive and ready availability of the "3D experience" a reality.

Thus, while there have been shown and described and pointed out fundamental novel features of the inventive system and method as applied to preferred embodiments thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices and methods illustrated, and in their operation, may be made by those skilled in the art without departing from

the spirit of the invention. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same gray to achieve the same results are within the scope of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

We claim:

1. A method, implemented in at least one data processing system, for improving the efficiency, quality, viewing comfort and/or visual impact of a 3D experience capable of being provided to at least one viewer of a 3D content media comprising a plurality of content sections, in conjunction with the use of at least a portion of a plurality of predetermined 3D content modification techniques, the method comprising the steps of:

(a) identifying at least one content section of the 3D content media comprising at least one 3D media element and selecting at least one corresponding predefined plural 3D content modification technique that is configured for provision of optimum improvement of the 3D experience when applied thereto;

(b) for each said selected at least one predefined plural 3D content modification technique configured for then-current application to said corresponding at least one 3D media element, applying said selected at least one predefined plural then-current 3D content modification technique thereto;

(c) for each said selected at least one predefined plural 3D content modification technique configured for future application to said corresponding at least one 3D media element, determining a setting for at least one parameter of said selected at least one predefined plural future 3D content modification technique, optimal for application to said corresponding at least one 3D media element;

(d) associating a reference to said selected at least one predefined plural future 3D content modification technique and said determined at least one optimal parameter, with said corresponding at least one 3D media element;

(e) selectively repeating said steps (a), b), (c) and (d) for at east one additional section of the 3D content media;

(f) selectively enabling an operator to view results of said steps (a), (b), (c), (d), and (e), and to at least one of: selectively cancel at least one result of at least one operation previously performed at least one of said steps (a), (b), (c), (d), and (e), and selectively change at least one operation previously performed at least one of said steps (a), (b), (c), (d), and (e), to an alternate operation selected by the operator;

(g) after conclusion of said step (f), generating a dynamic 3D content media container file configured for playback to at least one viewer utilizing at least one 3D content playback system operable to apply said selected at least one predefined plural future 3D content modification technique to said corresponding at least one 3D media element in accordance with said at least determined at least one optimal parameter, and further configured to store, for each 3D content media element identified at said step (a), at least one of:

at least one immediate 3D content modification applied at said step (b), and

at least one said associated reference to said at least one corresponding predefined plural future 3D content modification technique, and said determined at least one optimal parameter therefor;

such that said dynamic 3D content media container file comprises 3D media content having at least one modified content section each comprising at least one modification specifically optimal for application thereto, thereby maximizing the efficiency, quality, viewing comfort and/or visual impact of the 3D experience being provided to viewers thereof during playback.

2. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the 3D content media comprises at least one of stereoscopic 3D content, and auto-stereoscopic 3D content.

3. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the 3D content media comprises at least one of first 3D content media previously captured by at least one 3D content capture system, second 3D content media previously generated by at least one 3D content source, third 3D content media previously converted, by a 3D content capture system from captured 2D media content, and fourth 3D content media previously converted, by a 3D content source, from previously generated 2D content.

4. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said at least one content section of the 3D content media, identified at said step (a), comprises a plurality of content frames comprising said at least one 3D media element.

5. The method of claim 4, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said predefined plural content frames comprise a corresponding scene, and wherein each said at least one 3D media element comprises at least cine of a static 3D displayed object, and a moving 3D displayed object.

6. The method of claim 1, for improving the efficiency quality, vie raring comfort, and/or visual impact of the 3D experience, wherein at least one of said steps (a), (b), (c), (d) and (e), is performed by the at least one data processing system under manual control of an operator.

7. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said at least one 3D content playback system comprises at least one of: a 3D content media player operable to process said dynamic 3D content media container file for playback by generating therefrom and transmitting a 3D content output signal to a corresponding connected 3D content display system, and a 3D content display system operable to process said dynamic 3D content media container file for playback by generating therefrom, and displaying said 3D content output signal.

8. The method of claim 7, wherein said at least one 3D content playback system is operable to apply each said at least one predefined plural future 3D content modification technique to said corresponding at least one 3D media element of said 3D content media, in accordance with said at least one optimal parameter therefor, further comprising the steps of:

(h) providing said dynamic 3D content media container file, generated at said step (f), to said at least one 3D content playback system;

(i) identifying, by said at least one 3D content playback system in said dynamic 3D content media container file, at least one said associated reference to said at least one corresponding predefined plural future 3D content modification technique, and said determined at least one optimal parameter therefor; and

(j) applying said at least one referenced corresponding predefined plural future 3D content modification technique to said corresponding at least one 3D media element of said 3D content media, in accordance with said at least one optimal parameter therefor.

9. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said plurality of predetermined 3D content modification techniques further comprises a plurality of content modification techniques operable to optimize at least one additional visual characteristic of 3D content media, further comprising the steps of, prior to said step (e):

(k) identifying at least one content section of the 3D content media comprising at least one visual characteristic, and selecting at least one corresponding predefined plural content modification technique that is configured for provision of optimum improvement of the 3D experience when applied thereto; and

(l) for each said selected at least one predefined plural content modification technique configured for immediate application to said corresponding at least one content section applying said selected at least one predefined plural immediate content modification technique thereto.

10. The method of claim 9, wherein said step (e) further comprises the step of:

(m) selectively repeating said steps (k) and (l) for at least one additional section of the 3D content media.

11. The method of claim further comprising the steps of, after said step (k) and prior to said step (e):

(n) for each said selected at least one predefined plural content modification technique configured for future application to said corresponding at least one content section, determining a setting for at least one parameter of said selected at least one predefined plural future content modification technique, optimal for application to said corresponding at least one content section; and

(o) associating a reference to said selected at least one predefined plural future content modification technique and said determined at least one optimal parameter, with said corresponding at least one content section.

12. The method of claim herein said step (e) further comprises the step of:

(p) selectively repeating said steps (n) and (o) for at least one additional section of the 3D content media.

13. The method of claim 11, wherein said at least one 3D content playback system is operable to apply said at least one corresponding predefined plural future content modification technique to at least one predetermined content section of said 3D content media, in accordance with said at least one optimal parameter therefor, further comprising the steps of:

(q) providing said dynamic 3D content media container file, generated at said step (f), to said at least one 3D content playback system;

(r) identifying, by said at least one 3D content playback system in said dynamic 3D content media container file, at least one said associated reference to said at least one corresponding predefined plural future content modification technique, and said determined at least one optimal parameter therefor; and

(s) applying said at least one referenced corresponding predefined plural future content modification technique to at least one predetermined content section of said 3D content media, in accordance with said at least one optimal parameter therefor.

14. The method of claim 1, wherein said step (q) comprises the step of:

(t) streaming said dynamic 3D content media container file, generated at said step (f), to said at least one 3D content playback system from a remote 3D content source.

15. The method of claim 13, wherein said dynamic 3D content media container file is stored on physical media operable to store 3D content media container files, and wherein step (q) comprises the step of:

(u) transmitting said dynamic 3D content media container file, generated at said step (f), to said at least one 3D content playback system from said corresponding physical media.

16. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the at least one data processing system operable to perform said steps (a), (b), (c), (d), and (e), is connected to said at least one 3D content playback system.

17. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein said at least one 3D content playback system comprises the at least one data processing system operable to perform said steps (a), (b (c), (d), and (e).

18. The method of claim 1, for improving the efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the at least one data processing system is operable to perform said steps (a), (b), (c), (d), (e), and (f), prior to playback of said dynamic 3D content media container file, further comprising the step of:

(v) after said step (f), storing said dynamic 3D content media container file, on physical media operable to store 3D content media container files, for later payback by said at least one 3D content playback system.

19. The method of claim 1, for improving efficiency, quality, viewing comfort, and/or visual impact of the 3D experience, wherein the at least one data processing system is operable to perform said steps (a), (b), (c), (d), (e), and (f), in conjunction with playback of said dynamic 3D content media container file by said at least one 3D content playback system.

* * * * *

US009681114B2

(12) **United States Patent**
Blumenthal et al.

(10) **Patent No.: US 9,681,114 B2**
(45) **Date of Patent: *Jun. 13, 2017**

(54) **SYSTEM AND METHOD FOR ADAPTIVE SCALABLE DYNAMIC CONVERSION, QUALITY AND PROCESSING OPTIMIZATION, ENHANCEMENT, CORRECTION, MASTERING, AND OTHER ADVANTAGEOUS PROCESSING OF THREE DIMENSIONAL MEDIA CONTENT**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(22) Filed: **Dec. 2, 2016**

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Related U.S. Application Data

(63) Continuation of application No. 14/054,772, filed on Oct. 15, 2013, now Pat. No. 9,521,390, which is a continuation of application No. 13/168,252, filed on Jun. 24, 2011, now abandoned, which is a continuation-in-part of application No. 12/642,757, filed on Dec. 18, 2009, now Pat. No. 8,558,830.

(60) Provisional application No. 61/138,926, filed on Dec. 18, 2008.

(51) **Int. Cl.**
H04N 13/00 (2006.01)

(52) **U.S. Cl.**
CPC ***H04N 13/0018*** (2013.01); ***H04N 13/0022*** (2013.01); ***H04N 13/0055*** (2013.01); ***H04N 13/0059*** (2013.01); *H04N 2213/003* (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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Assistant Examiner — Jed-Justin Imperial
(74) *Attorney, Agent, or Firm* — Brown & Michaels, PC

(57) **ABSTRACT**

A method, implemented in at least one Depth Based Image Rendering (DBIR) data processing system, for improving the efficiency, quality, viewing comfort and/or visual impact of a 3D experience capable of being provided to at least one viewer of a 3D content media comprising a plurality of content sections in 2D+Depth format, in conjunction with the use of at least a portion of a plurality of predetermined 3D content modification techniques.

20 Claims, 6 Drawing Sheets

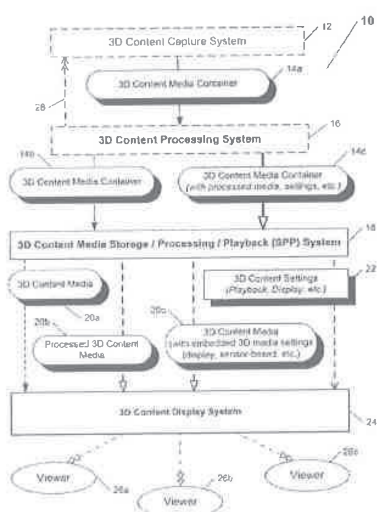


FIG. 1

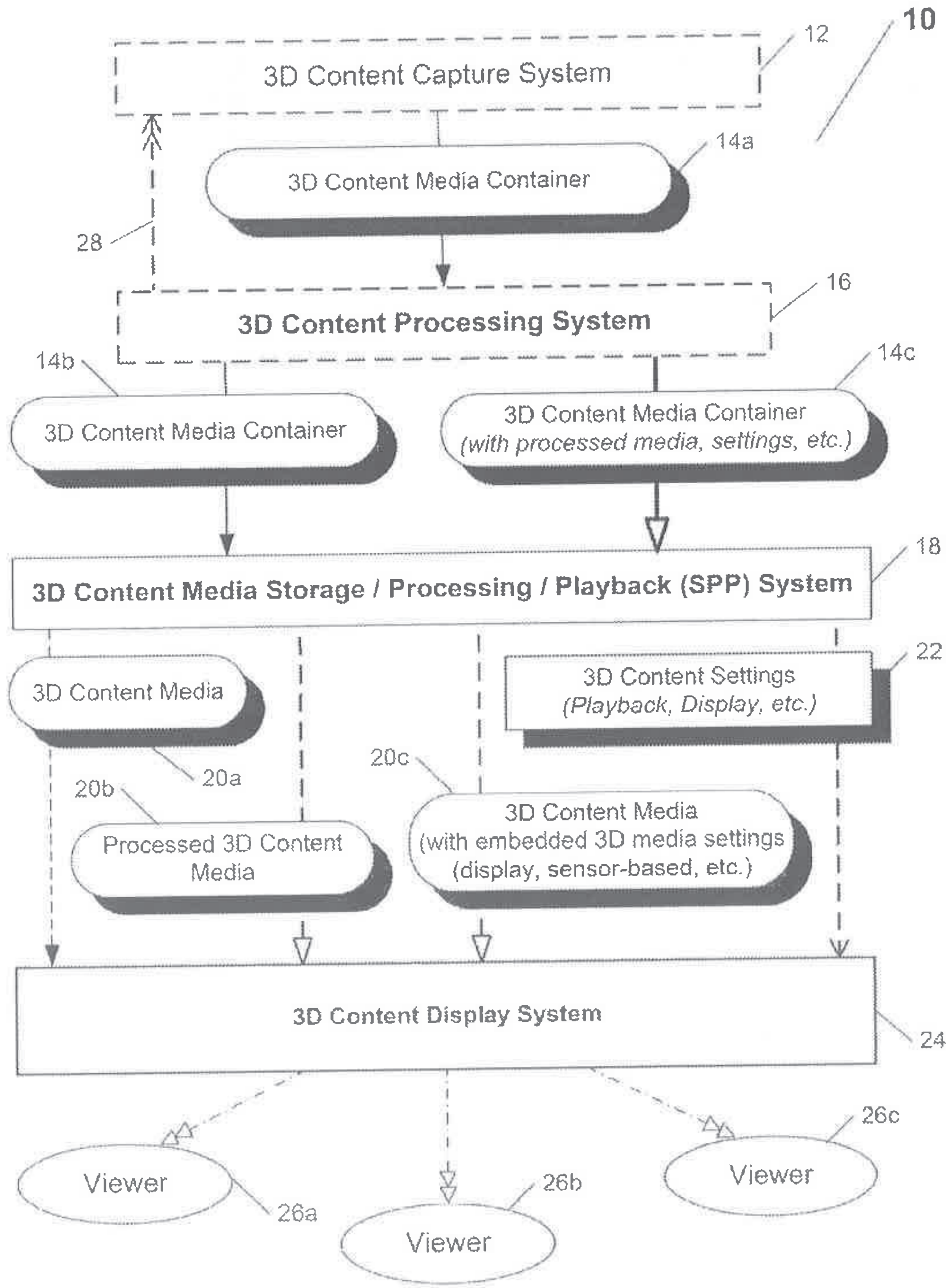

10
12
3D Content Capture System
14a
3D Content Media Container
28
16
3D Content Processing System
14b
14c
3D Content Media Container
3D Content Media Container
(with processed media, settings, etc.)
18
3D Content Media Storage / Processing / Playback (SPP) System
3D Content Media
22
3D Content Settings
(Playback, Display, etc.)
20a
20c
20b
Processed 3D Content Media
3D Content Media
(with embedded 3D media settings
(display, sensor-based, etc.)
3D Content Display System
24
26c
Viewer
Viewer
26a
26b
Viewer

FIG. 2

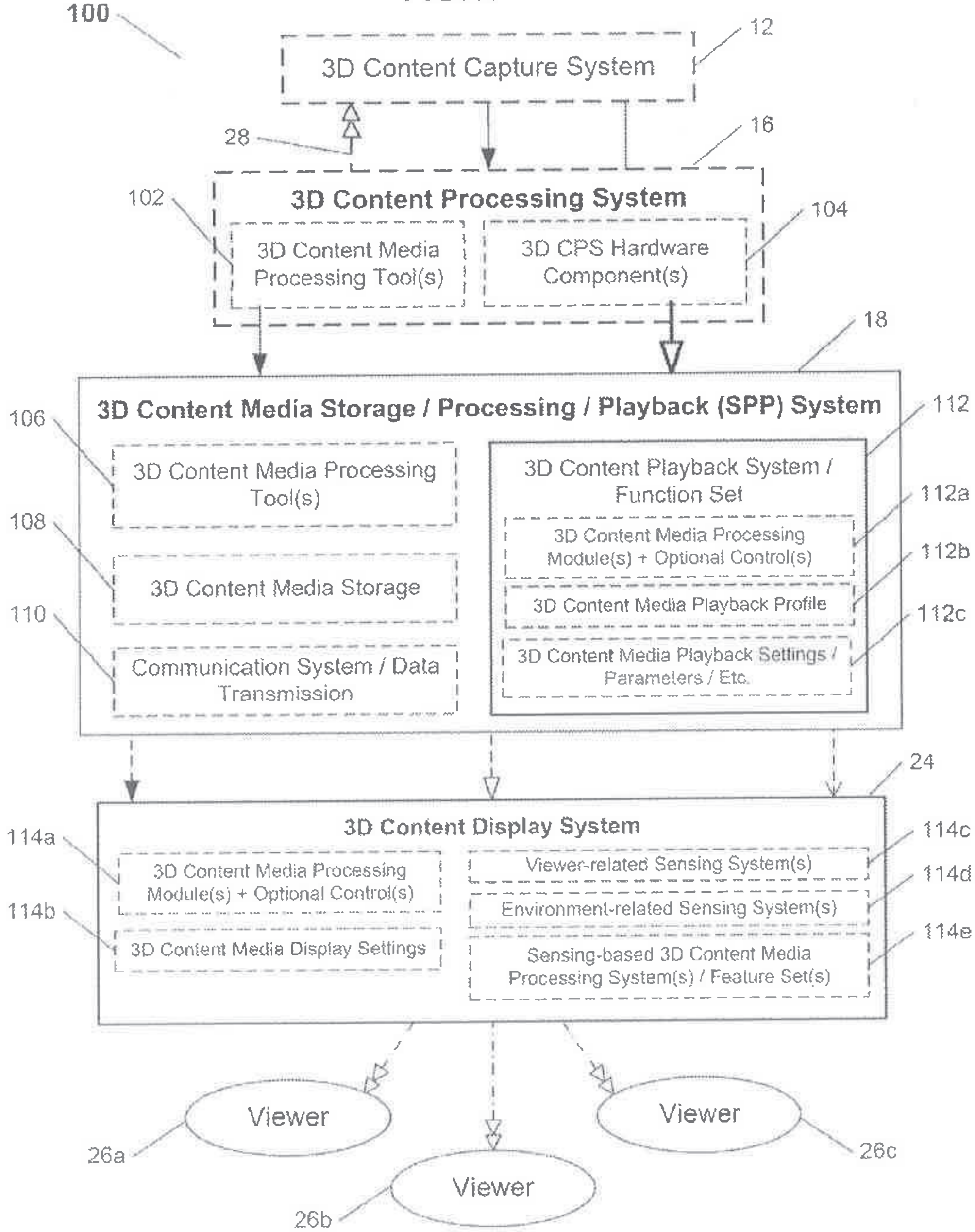

100
3D Content Capture System
12
28
16
3D Content Processing System
102
3D Content Media Processing Tool(s)
3D CPS Hardware Component(s)
104
18
3D Content Media Storage / Processing / Playback (SPP) System
106
3D Content Media Processing Tool(s)
108
3D Content Media Storage
110
Communication System / Data Transmission
112
3D Content Playback System / Function Set
112a
3D Content Media Processing Module(s) + Optional Control(s)
112b
3D Content Media Playback Profile
112c
3D Content Media Playback Settings / Parameters / Etc.
24
3D Content Display System
114a
3D Content Media Processing Module(s) + Optional Control(s)
114b
3D Content Media Display Settings
114c
Viewer-related Sensing System(s)
114d
Environment-related Sensing System(s)
114e
Sensing-based 3D Content Media Processing System(s) / Feature Set(s)
Viewer
26a
Viewer
26b
Viewer
26c

FIG. 3

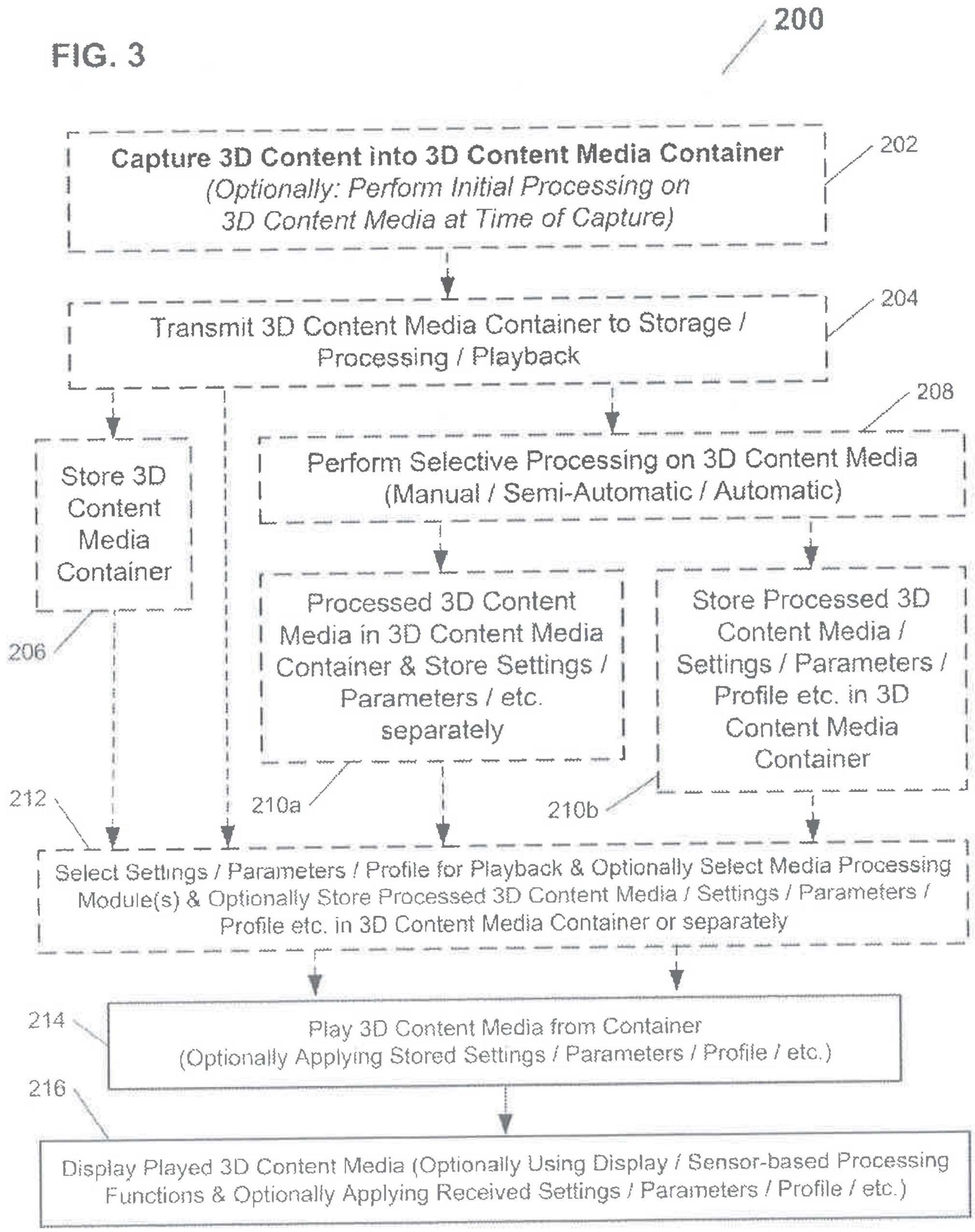

200
Capture 3D Content into 3D Content Media Container
(Optionally: Perform Initial Processing on
3D Content Media at Time of Capture)
202
Transmit 3D Content Media Container to Storage /
Processing / Playback
204
Store 3D
Content
Media
Container
206
Perform Selective Processing on 3D Content Media
(Manual / Semi-Automatic / Automatic)
208
Processed 3D Content
Media in 3D Content Media
Container & Store Settings /
Parameters / etc.
separately
210a
Store Processed 3D
Content Media /
Settings / Parameters /
Profile etc. in 3D
Content Media
Container
210b
212
Select Settings / Parameters / Profile for Playback & Optionally Select Media Processing
Module(s) & Optionally Store Processed 3D Content Media / Settings / Parameters /
Profile etc. in 3D Content Media Container or separately
214
Play 3D Content Media from Container
(Optionally Applying Stored Settings / Parameters / Profile / etc.)
216
Display Played 3D Content Media (Optionally Using Display / Sensor-based Processing
Functions & Optionally Applying Received Settings / Parameters / Profile / etc.)

FIG. 4A

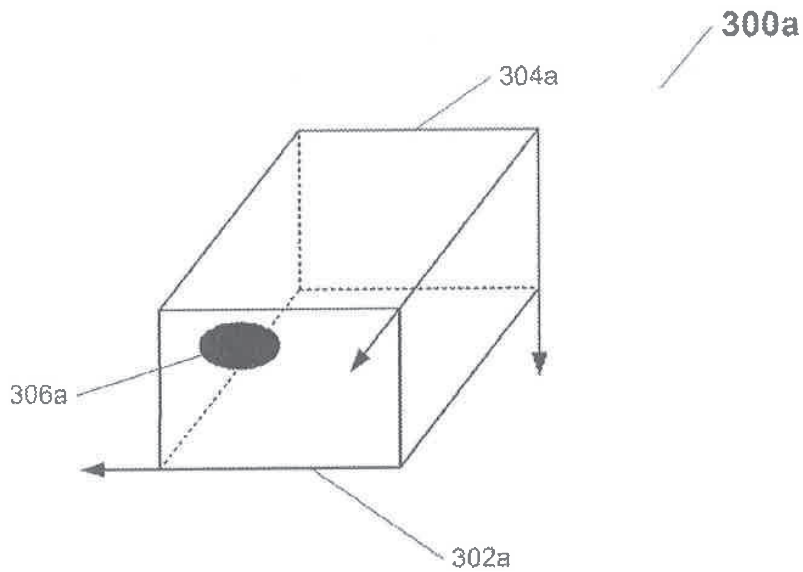


FIG. 4B

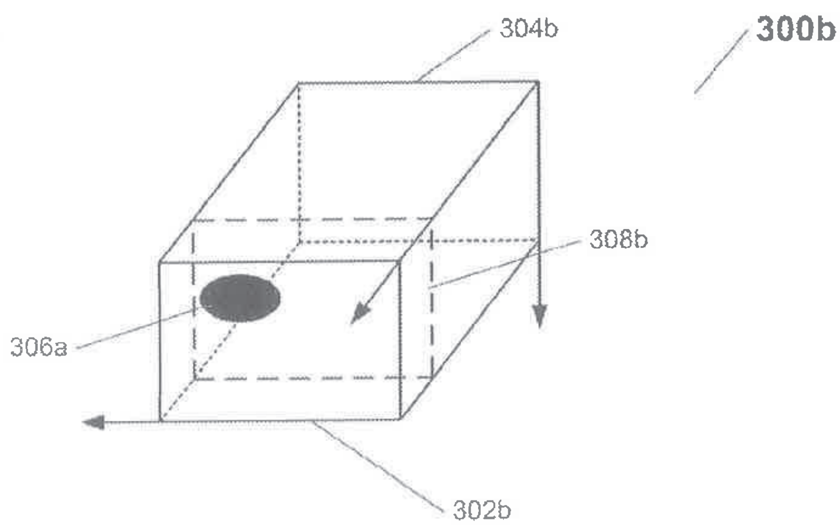


FIG. 4C

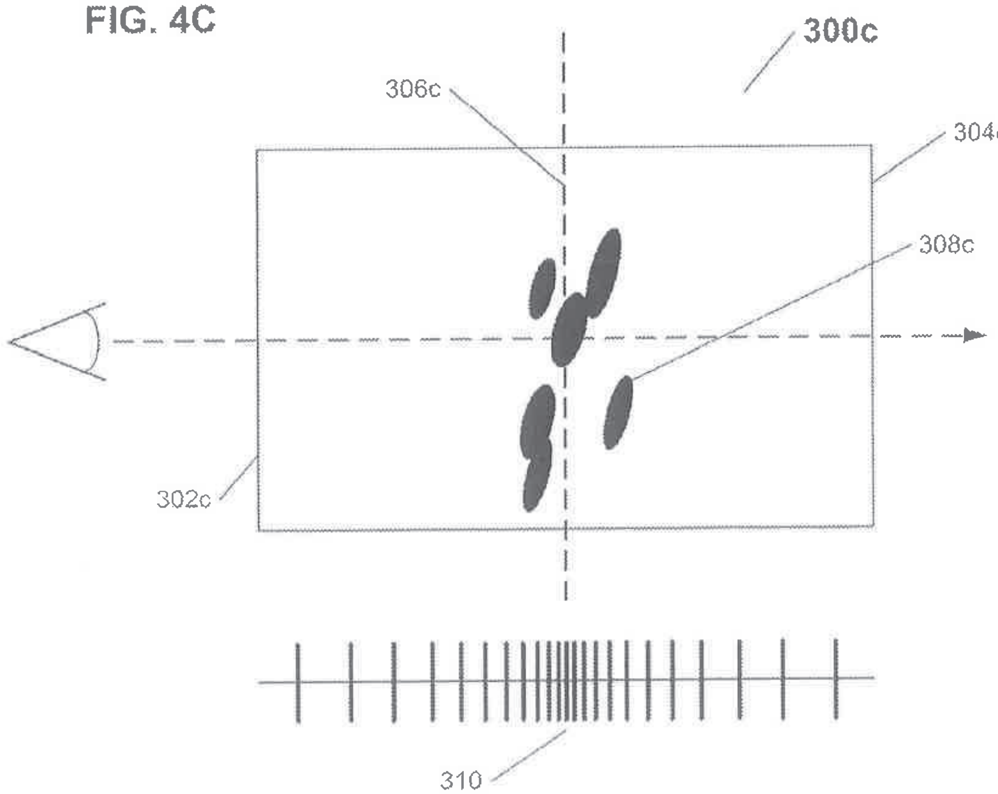
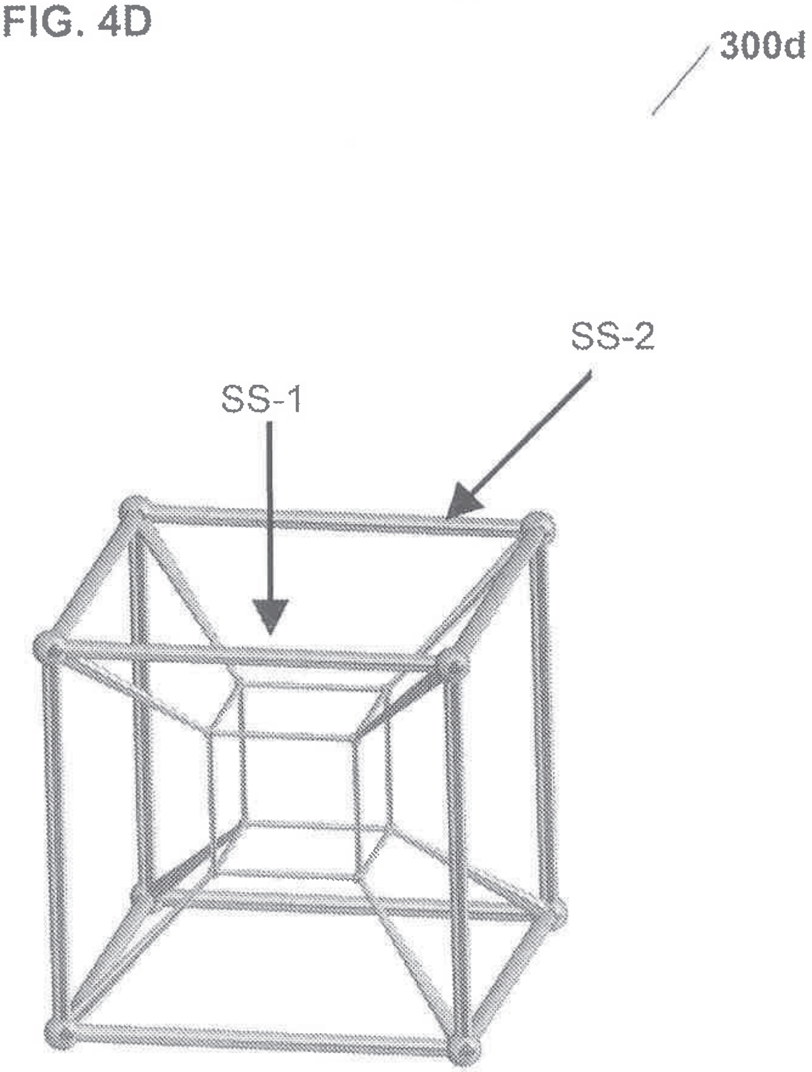


FIG. 4D



SYSTEM AND METHOD FOR ADAPTIVE SCALABLE DYNAMIC CONVERSION, QUALITY AND PROCESSING OPTIMIZATION, ENHANCEMENT, CORRECTION, MASTERING, AND OTHER ADVANTAGEOUS PROCESSING OF THREE DIMENSIONAL MEDIA CONTENT

CROSS REFERENCE TO RELATED APPLICATIONS

The present patent application is a continuation of U.S. patent application Ser. No. 14/054,772, filed Oct. 15, 2013, which is a continuation of U.S. patent application Ser. No. 13/168,252, filed Jun. 24, 2011, now abandoned, which is a continuation-in-part of U.S. patent application Ser. No. 12/642,757, filed Dec. 18, 2009 and issued as U.S. Pat. No. 8,558,830, which claims priority from U.S. Provisional Patent Application Ser. No. 61/138,926, filed Dec. 18, 2008.

FIELD OF THE INVENTION

The present invention relates generally to systems and methods for improving the 3D experience provided by playback and display of 3D content, and more particularly to systems and methods for providing 3D content media-centric solutions that greatly improve the quality and impact and other desirable features of any 3D content media, while decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and 3D media display solutions, thus maximizing the 3D experience produced therefrom.

BACKGROUND OF THE INVENTION

Various tools for capturing, generating, processing, playing back and displaying three dimensional (3D) content media (especially motion video), have been available for quite some time. Display technologies for 3D content media in particular have evolved quite a bit from the earliest barely passable offerings which required the audience to wear flimsy "glasses" provided with a different (red or blue) lens for each eye, to more advanced electronic "stereoscopic 3D" glasses equipped with remotely triggered liquid crystal display (LCD)-based lenses (acting as alternating individually controlled "shutters"), which provided its wearers with an engaging and quality "3D experience", given properly prepared 3D content media paired with the appropriate playback and corresponding display technologies working on conjunction with the 3D glasses.

However, this approach for providing a "3D experience" is quite cumbersome and very expensive to use and maintain, and has thus been of very limited commercial success, primarily being relegated to special entertainment venues, such as certain IMAX theaters and high-end amusement parks. In addition to expensive, and relatively fragile, glasses being required for each member of the audience (which in some cases excludes those who cannot comfortably wear them), the latest stereoscopic 3D solutions require sophisticated and expensive computer-based components for storing and processing the 3D content, as well as similarly complex and expensive electronic components for displaying the 3D content and remotely controlling the stereoscopic 3D glasses.

Of course, as is expected, the very limited availability and expense of the above 3D content media playback and display technologies, in particular, have led to a relative lack of interesting 3D content (due to the expense in its creation and the very limited commercial interest therein), which in turn has resulted in a very limited availability of 3D content capture and processing tools, thus essentially resulting in a "vicious cycle".

Nonetheless, in recent years, there has been a revolutionary leap in the solutions being offered for displaying 3D content media. Specifically, a number of companies have developed and offered flat panel displays of varying sizes capable of creating a virtual 3D experience for the viewer without the need for the viewer to wear electronic or other types glasses or similar devices. Moreover, these displays do not require other specialized equipment and can work with specially configured 3D content that may be stored on, and played back from, conventional readily available computers. And, while these displays are still quite expensive, they are priced within reach of most organizations (and within reach of some consumers), with the price certainly poised to decrease exponentially, commensurate with an increase in production (as has been the case with the HDTV flat panel display market).

Therefore, for the past several years, ever since these newest stand-alone 3D ("SA-3D") content media display technologies have become available at relatively reasonable prices, there has been a widespread consensus that proliferation of three-dimensional (3D) content media (both in entertainment and in advertising), as well as of the hardware and software technologies necessary for SA-3D content capture, processing, playback, and display, is inevitable, and that the market for 3D-related technologies will experience explosive growth.

Nevertheless, to date there has not been a dramatic push forward that would make the above predictions become reality. One of the main reasons for this aforementioned lack of the expected proliferation of commercially successful SA-3D-related content, software and hardware offerings, is the fact that although these newest SA-3D content media display technologies have a number of very significant advantages over all previously known 3D-related offerings, they also suffer from a number of flaws. Specifically, on the average, the quality and impact of the 3D experience delivered by the available SA-3D solutions is lower than that of conventional high-end glasses-based stereoscopic 3D offerings. Moreover the relative position of each viewer to the SA-3D screen (in terms of vertical and horizontal viewing angles, distance, etc.) has significant impact on that viewer's overall 3D experience when viewing the displayed SA-3D content. Moreover, the existing SA-3D hardware and software solutions for the capture, processing, playback and display of 3D content media have focused on areas of expertise, offer individual and discrete benefits in various narrow aspects of 3D and SA-3D technologies with little or no regard for the offerings of other solution providers, resulting in literally dozens of incompatible proprietary software and hardware products with nothing to tie them together.

It would thus be desirable to provide a system and method directed to one or more modular unifying scalable solutions, preferably implemented in a configurable infrastructure, that greatly improve the quality and impact of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions. It would further be desirable to provide a system and method capable of achieving the above goals by selectively performing 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure from 3D content capture to 3D

content media display. It would moreover be desirable to provide a system and method capable of determining and implementing selective or optimal storage, transmittal, and application(s) of 3D content processing/settings parameter/profile configuration(s) prior to display of corresponding 3D content media to one or more viewers thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, wherein like reference characters denote corresponding or similar elements throughout the various figures:

FIG. 1 is a schematic block diagram of an exemplary embodiment of the inventive scalable modular infrastructure for selectively implementing, configuring, and managing various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantage s processing and/or configuration;

FIG. 2 is a schematic block diagram of exemplary embodiments of various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantageous processing and/or configuration, that may be implemented in the novel infrastructure of FIG. 1;

FIG. 3 is a process flow diagram of an exemplary embodiment of the inventive process, that may be performed in whole, or selectively in part, by at least one component of the inventive system of FIG. 2, or that may otherwise be implemented in one or more components of the novel infrastructure of FIG. 1; and

FIGS. 4A-4D are various views of a schematic representation of an exemplary 3D media content volume structure that may be utilized in conjunction with various embodiments of the present invention of FIGS. 1 to 3, and illustrate a varying 3D spatial volume which contains at least one object of interest to the viewer of the 3D media content displayed therein.

SUMMARY OF THE INVENTION

The present invention is directed to a system and method for providing 3D content-centric solutions that greatly improve the quality and impact of 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and display solutions, thus maximizing the 3D experience produced therefrom. The novel system and method accomplish these goals by providing modular unifying scalable 3D content-centered solutions, preferably implemented in a configurable infrastructure, that improve the quality and impact of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions.

The inventive system and method advantageously enable automatic, semi-automatic or user-controlled selective performance of 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure (from 3D content capture, to 3D content processing (and/or 2D to 3D content conversion), and to 3D content media display), and in at least one embodiment thereof, the inventive system and method are capable of determining and implementing selective or optimal storage, transmittal, and application of 3D content processing/settings/parameter/profile configuration(s) prior to, or during, display of corresponding 3D content media to one or more viewers thereof.

Other objects and features of the present invention will become apparent from the following detailed description considered in conjunction with the accompanying drawings. It is to be understood, however, that the drawings are designed solely for purposes of illustration and not as a definition of the limits of the invention, for which reference should be made to the appended claims.)

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The system and method of the present invention, address all of the disadvantages, flaws and drawbacks of all previously known 3D-related hardware and software offerings, by providing novel 3D content media-centric solutions that greatly improve the quality and impact of any 3D media content, while advantageously decreasing the required levels of computing power, and lowering the complexity of the necessary 3D media playback and 3D media display solutions, thus maximizing the 3D experience produced therefrom for one or more viewers.

The novel system and method accomplish the above goals by providing modular unifying scalable 3D content-centered solutions, preferably implemented in a configurable infrastructure, that greatly improve the quality and impact of any 3D media content, while decreasing the required levels of computing power, and lowering the complexity of the necessary playback and display solutions.

In various exemplary embodiments thereof, the inventive system and method advantageously enable automatic, semi-automatic or user-controlled selective performance of 3D content processing and/or settings/parameter configuration at one or more components of the infrastructure (from 3D content capture to 3D content media display), and in at least one embodiment thereof, the inventive system and method are capable of determining and implementing selective or optimal storage, transmittal, and application(s) of 3D content processing/settings/parameter/profile configuration(s) prior to display of corresponding 3D content media to one or more viewers thereof.

It should be noted that current 3D media content capture, processing, playback and display solutions take the "lowest common denominator" approach to applying playback/display optimization and related settings (intended to improve the appearance, quality, impact and overall "3-D Experience") to the 3D content media being displayed to at least one viewer thereof. This is very problematic because the desirable settings and parameters, as well as the necessary processing power and other requirements, for optimizing and maximizing the quality, impact and overall 3-D experience level for any displayed 3D media content, vary greatly between different 3D content media files, and even between different segments/portions within any particular 3D content media file itself. In particular, these variations largely depend on the specific 3D scenes being shown (i.e., on the depicted objects/subjects, their relative motion, complexity, backgrounds, lighting, etc), and on other external factors, such as the original 3D content capture and/or conversion parameter settings, the capture hardware used, the current display, and even on the viewers' relative position (orientation, elevation, distance, etc.) thereto.

Finally, prior to discussing the various embodiments of the present invention in greater detail below, it is important to note that while many of the embodiments of the present

invention (and the various novel tools, techniques and processes relating thereto), are described and discussed as being implemented and/or utilized in the field of 3D visual entertainment (film, television, games, etc., all embodiments of the inventive system and method, can be readily and advantageously utilized in virtually any scientific, military, medical, forensic, or industrial application based on, or involving 3D visualization or display and/or manipulation of 3D content medial, as a matter of design choice, without departing from the spirit of the invention.

Referring now to FIG. 1, an exemplary embodiment is shown of an inventive scalable modular infrastructure **10** for selectively implementing, configuring, and managing various components of the inventive system for selectively providing adaptive scalable modular functions related to 3D content media capture, generation, quality/processing optimization, enhancement, correction, mastering, and other advantageous processing and/or configuration.

The infrastructure **10** includes optional components **12** and **16** (3D content capture system **12**, and 3D content processing system **16**) for selectively capturing and optionally processing 3D content media prior to placing it into a 3D content media container (e.g., the, stream, etc.). The infrastructure **10** also includes a 3D content media storage/processing/playback SPP system **18**, operable to selectively store, process, and/or play back 3D content media from a medial container that may be received from components **12** and/or **16**, or that may be delivered from another 3D content media source (such as media converted from another 3D format, or from non-3D content source).

The SPP system **18** preferably communicates with a 3D content display system **24**, operable to display 3D content media (in one or more configurations, and capable of displaying/utilizing at least one of: unprocessed 3D content media **20***a*, processed 3D content media **20***b*, optimized 3D content setting for use with other 3D media content received from a source outside of the infrastructure **10**, etc.) to at least one viewer (e.g., to viewers, **26***a*-**26***c*).

In at least one embodiment of the present invention, the 3D content processing system **16** may also optionally comprise at least one 3D content processing feature/function that is optimized for utilization in conjunction with the 3D content capture system **12**. For example, in one embodiment of the infrastructure **10**, the 3D content capture system **12** may actually be a conventional or a modified 3D content capture system, that is provided with additional necessary features (such as scene/visual field depth mapping (or equivalent capabilities)) to enable dynamic (and optionally "on the fly") capture of 2D content, plus sufficient depth (and/or related non-image) information that is sufficient to enable the systems **12** and **16** to produce desirable 3D content for delivery to the SPP system **18**. An exemplary embodiment of operation of the infrastructure **10** is discussed in greater detail in conjunction with FIG. 3.

Referring now to FIG. 2, various exemplary embodiments of the possible components of an inventive system **100**, that may be implemented in the inventive infrastructure **10** of FIG. 1, operable to selectively provide adaptive scalable modular functions related to 3D content media capture generation, quality/processing optimization enhancement, correction, mastering, and other advantageous processing and/or configuration, that may be implemented in the novel infrastructure **10** of FIG. 1. Preferably, one or more of the components (**12**, **16**, **18**, and **24**), and subcomponents (**102** to **114***e*) of the inventive system **100**, are capable of performing one or more steps of an exemplary novel process **200** of FIG. 3.

Referring now to FIG. 3, an exemplary embodiment is shown as a process flow diagram of an exemplary embodiment of the inventive process, with steps **202** to **216**, that may be performed in whole, or selectively in part, by at least one component of the inventive system **100** of FIG. 2, or that may be implemented in one or more components of the novel infrastructure **10** of FIG. 1.

In summary, the inventive system **100** (through selective operation of one or more components thereof, as may be implemented in infrastructure **10** of FIG. 1), in additional exemplary embodiments thereof, preferably associates at least one predetermined 3D content improvement ("3DCI") parameter set (e.g., optimization playback, and/or display settings and/or parameters, selection of one or more processing modules and/or stages of use thereof (for example during one or more of: capture, post-processing, playback or display), display tool adjustments, etc.), with 3D media content containers.

In at least one embodiment thereof, the optimal 3DCI parameter set comprises a plurality of "static to dynamic" display tools adjustments, which may be advantageously recorded and/or otherwise embedded in the 3D content media file, to thereby become a permanent feature thereof during later playback and/or processing (e.g., post production, etc.) of the 3D content media. In another embodiment of the present invention, the optimal 3DCI parameter set integration technique may also be utilized as a playback feature which is interpreted by a proprietary software and/or hardware 3D media player (which, by way of example can be configured as a "set top box" or equivalent, for 2D to 3D content conversion, playback of "enhanced" 3D content media having an integrated 3DCI parameter set, and for other functions such as utilization of de-encryption solutions for playback of protected 3D content media.

Advantageously, this association and/or linking, occurs on a scalable basis from the most basic level at which an optimal 3DCI parameter set is associated with one or more corresponding 3D content media containers (that may be in a container directory, a playlist, a queue, or in a similar storage container), such that the appropriate 3DCI parameter set is activated in conjunction with its corresponding 3D content media from the container being played, to a more advanced level at which different 3DCI parameter sets are associated with (or otherwise linked or assigned to), the appropriate different portions of each 3D content media container, such that during playback and/or display thereof, different sections of the displayed content receive the optimal level of "treatment."

In one exemplary embodiment of the present invention, the above-described techniques may be readily implemented in a media player (e.g., software based or otherwise), operable to process and play back a 3D media content clip, and which is operable to enable an operator thereof to (1) exercise full control over adjustments to 3DCI parameters on a scalable/variable granularity basis (ranging from a portion of a single content frame to a scene formed from a plurality of sequential frames), and (2) embed various settings and parameters (e.g., even data points of DCT (discrete cosine transform) settings), and automatically imbed them in the 3D media content clip for later optimized playback.

Advantageously, the novel media player is further operable to enable the operator to run a 3D media content clip, stop at a particular frame, apply predefined (e.g., DCT) adjustments and record them in the clip, such that the adjustment is automatically carried forward through the clip until the operator stops at the next frame which requires a different adjustment, or the clip ends.

The novel system and method advantageously address and cover both the creation/determination/configuration of various scalable 3DCI parameter sets during 3D content capture, during initial processing, at any other time up to and including on-the-fly during playback, or any combination of the above, as a matter of design choice without departing from the spirit of the invention. Similarly, the process of creation/determination/configuration of the 3DCI parameter sets can be wholly or partially automated, or can be manually performed as a "creative process" by one or more content professional, preferably utilizing one or more 3DCI tools and support modules as desired or as necessary.

For example, tools utilizing novel dynamic and adaptive variable 3D depth and layering techniques of the present invention (i.e., Depth Based Image Rendering or "DBIR" techniques), may readily be used for both automated and content professional-directed 3DCI parameter creation (e.g., the 3DCI may include desired depth adjustment parameters, variable layer densities centered on certain displayed objects or object types, dynamic variable resolution based on relative distance of the closest object depth layers to the viewer, etc.).

The 3DCI parameter sets may be linked to, or otherwise associated with the respective 3D content media containers (or portions thereof), and may thus be stored in dedicated or other form of files, containers or libraries, separately from the 3D content media containers, or may be stored within the 3D content media containers, (e.g., embedded therein, as discussed above).

The inventive system **100** (through selective operation of one or more components thereof, as may be implemented in infrastructure **10** of FIG. **1**, for example in accordance with the process **200**, or otherwise) in various additional exemplary embodiments thereof is operable to provide selective, automatic, or user-controlled dynamic adaptive/scalable utilization of layered depth measurement/mapping (e.g., DBIR) techniques in 3D content media, coupled with techniques for identifying and spatially (3D) tracking static and moving displayed objects in the depth mapped layered scenes to provide the desired optimal level of at least one predefined aspect of 3D content experience.

In various exemplary embodiments thereof, the system and method of the present invention advantageously comprise the utilization of at least one of (and preferably both) the following novel 3DCI methodologies (that may be implemented utilizing one or more of various suitable 3D content processing techniques): (1) Dynamic Volumetry, and (2) Viewer Perception Enhancement, each described in greater detail below.

When presenting 3D content using a digital display or a projector, the challenge is not only to separate the elements of the content into a spatial continuum ranging from foreground to background, but also to reproduce correctly the viewer perspective that would naturally proceed from the action on screen. This is true for both content originally captured in 3D and for content converted from an original 2D source.

When presented with a visual field containing many objects, the observer will isolate the objects and focus on a specific one or few in order to better interpret the action within the field. The process of separation is based on many criteria/properties such as color, brightness and relative motion. Once the objects have been separated, the observer's primary focus is chosen. Following that choice, a different set of perceptual algorithms is used to track the action within the scene. The center of interest is maintained in tight focus and other elements of the image which are closer, farther or moving at a different rate are defocused. Thus, in order to improve the 3D effect of any digital display, the system used must not only manage the correct definition of varying spatial relationship between image elements, it must also generate the presentation in accord with the environmental conditions of the display and the perceptual expectations of the viewer.

Essentially, there are two broad categories of activity that take place within any 2D-to-3D video transformation pipeline:

(A) Conversion: Development of a series of data which describe the calculated XYZ position of picture elements present within each frame of the video; and

(B) Presentation: A mathematical process that shows the viewpoint of picture elements from different perspectives. (For example: Two views are required for stereoscopic and g or more for ASD presentations).

Each of the above activities is performed at a different time & place. Conversion is a complex process, typically performed one time only for any given piece of content, whether live or off-line. The conversion process is usually performed in a studio or using a separate real-time technology module (in the case of live conversion). The Presentation processes involve different calculations that are performed at each viewing time on equipment located at the viewing position. In addition to the methods required to reproduce the basic sub-images inherent to the 3D presentation technology, the images must be adjusted according to viewer and site-based parameters such as specific output technology, venue physical format, ambient light conditions and viewer position/preference.

Dynamic Volumetry refers to the process of adjusting the generation of the 3D images to compensate for the parameters related to the spatial relationship between elements within a series of images comprising one or several 3D scenes. Referring now to FIGS. **4A** to **4D**, an exemplary embodiment of the inventive Dynamic Volumetry methodology is shown. FIGS. **4A** to **4D** show varying volumetric 3D spaces **300*a*-300*d***, which contain a range of objects of interest **306*a*** to **306*c*** arranged from foreground to background. At different times in the video sequence, the volume or scale on any or all of the axes will change to allow a reasonable discrimination of the objects of interest. Additionally, the system performs the sub-image generation with a focus set in a plane containing the center of perceived action. FIG. **4A** shows a spatial volume ranging from foreground **302*a*** to background **304*a*** and including an object of interest **306*a***.

FIG. **4B** shows a Perception Focus Plane **308*b*** At T_0 and a Primary object of Interest (Perception Focus) **306*b***. The positioning of the focus plane is dynamically adjusted to center on the objects or zone with maximum relation to the action within the image sequence thus permitting the system to display the greatest degree of 3D separation.

FIG. **4C** shows a side view of 3D space and Primary object of Interest **306*c***. (Perception Focus). Spatial data information can be linear across the space (foreground to background) or non-linear thus permitting the system to display the greatest degree of 3D separation around the area of maximum interest or action.

FIG. **4D** shows Scene Space at T_0 (SS-1) to Scene Space at T_{0+n} (SS-2). The volume of the space is adjusted dynastically to allow the background and foreground to be imaged in such a way as to always include or exclude the zone of maximum interest with the greatest degree of 3D separation.

Presentation processes involve different calculations that are performed at each viewing time on equipment located at

the viewing position. In addition to the methods (described above) required to reproduce the basic sub-images inherent to the 3D presentation technology, the images must be adjusted according to viewer and site-based parameters such as specific output technology, venue physical format, ambient light conditions and viewer position/preference.

The inventive system and method dynamically modify a series of coefficients/formulae affecting the presentation rendering of a data file containing and describing the sub-elements of an image sequence (video stream) in such a way as to emulate the natural interest and perception of a view when exposed to a real environment. The modifications may be based on variables such as the following:

Environment Specific:
Viewer position
Ambient lighting
Presentation equipment technology
Content Specific:
Foreground/background separation
Primary activity focus position
Overall scene topography
Topography of preceding and following scenes

Dynamic adjustments will be at frame speed and may impose specific adjustments for a single scene, a single frame, or an interpolated sequence of adjustments including linear and non-linear transforms between specified points of interest, whether scene-based or not.

Advantageously, in accordance with the present invention, the novel system **100** preferably comprises sufficient hardware and/or software components and subcomponents to provide and utilize one or more of the following advantageous and novel functionalities/techniques which are contemplated by the present invention in implementing various embodiments and aspects of the inventive Dynamic Volumetry methodology:

1) Automatic/Adaptive Depth Layer Acquisition:

Utilization of existing 3D field depth-detection cameras (and related and/or substantially equivalent hardware) during the 3D content capture/acquisition stage (or, as may be applicable during the initial intake stage of 2D content to be converted to 3D) to acquire a predetermined number of depth layers for the 3D content to form the desired layered "depth field environment" for each 3D content frame/scene, etc., which may be the same depth quantity for the entire container, or which, in accordance with the present invention, may dynamically, adaptively or selectively vary for different portions of the content (for example pursuant to one or more predetermined depth later variation profiles).

2) Dynamic Layer Density Assignment:

Assignment of predetermined amounts of layers to various displayed objects in the 3D content being captured and/or converted. Optionally, the assignment process may utilize variable layer density (e.g., depending on relative depth of different parts of the objects). Alternately, an object's layer density distribution (or profile) may be shifted/adjusted dynamically as the object moves within the depth field.

3) Dynamic Focal Layer Determination/Tracking:

Determination, tracking and use of at least one variable dynamically determined/adaptive "focal" layer (i.e., everything behind the focal layer needs less detail and less layer density, anything close needs more) for entire scenes, or for portions thereof.

4) Dynamic Multi-Layer Focal Objects/Scenes Determination/Tracking:

Determination, tracking and/or use of different variable dynamically determined/adaptive "focal object" plural layers assigned to one or more objects in various 3D content scenes, and that can move to different depths depending on relative depth positions of the assigned object, thus enabling variable layer density across objects (essentially providing, to the inventive system **100**, a control protocol for simplified manipulation of an object's depth layer distribution).

5) Assignment of Variable Spatial Resolution to Objects:

In conjunction with one or more of the various features above, utilization of a mixture of different image resolution magnitudes (pixel density, etc.), and/or optionally of related image processing (anti-aliasing, etc.), for portions of objects/scene regions in an optimized manner (for example, by processing/displaying higher resolutions for those object layers that are closest to the viewer (or that otherwise would benefit from additional detail)).

6) Geospatial External Calibration:

Optionally, maintaining a selected level of "geospatial accuracy" with external calibration distance points or with internal software reference markers, enables visual depth adjustment to precise geo-spatially accurate images to be accomplished to a degree as may be desired (or necessary) for one or more 3D content applications up to, and inclusive of, extremely dense layering across each 3D content scene and/or object(s) (for example as may be required for military, scientific, and/or medical applications, etc.).

7) Application of Dynamic Geospatial Survey Solutions in 3D Media Content Context:

Utilization and/or adaptation of various advantageous geo-centric survey depth (elevation) mapping techniques and methodologies to various DBIR techniques utilized in accordance with the present invention, preferably with additional modifications applied thereto, to make them dynamic, adaptive, and highly configurable.

8) Additional Novel Tools and Techniques:

Selective configuration, implementation, and use of various additional features including, but not limited to: dedicated 3D processing (D3DP) hardware (e.g., "black box") re-mastering/editing tools, depth correction techniques, various display/media player modules and editing tools, streamlining D3DP is hardware rendering conversion processes (e.g., grayscale values to corresponding layer depth locking, and later image depth manipulation correction/optimization via grayscale value adjustments, etc.), and so forth.

It should also be noted that the various embodiments of the inventive system and method, can be advantageously configured, and/or adapted, to utilize and/or combine the very best of currently available (as well as any future) 3D-related solutions in an interoperable manner, that is as transparent as possible to the end user (whether the user is in the field of 3D content creation, or is part of the 3D content audience).

By way of example, the present invention may be implemented, in whole or in part, in connection with, or utilizing a 2D to 3D video conversion server (3DVC server), utilizing various additional applications and software-based tools. This technique may employ a variety of commercially available software tools designed to provide for some specific 2D to 3D conversion techniques such as separate interval field sequential frame grabbing, and thereafter mixing of the subsequent frames to create a depth map based on horizontal motion (which in itself is a sub-standard 3D conversion technique). However, when this approach, is integrated with a variety of other compatible 3D content enhancement techniques, and further assisted/upgraded by the aforementioned inventive system features and tools, it may be configured and implemented to perform at a substantially higher standard of 3D depth conversion, using one

or more suitable DBIR solutions, and therefore become an excellent candidate for an inexpensive and easily to use basis for a Broadcast Quality 3D video standard. It should be noted that the opportunity to integrate a number of commercially available 2D to 3D video depth conversion methodologies with a 3DVC server exists only as a consequence of the implementation of the various novel depth mapping correction and relating techniques of the inventive system **100**.

Therefore, the combination of the various commercially available 3D-related tools in concert with a 3DVC server, a media player, the various novel post-processing and display tools of the present invention, unexpectedly and advantageously resulted in the discovery of a completely unique and new process of image correction, 3D depth mapping, and depth impact optimization, that, when properly used and configured in accordance with the present invention are capable of elevating conventional 2D+Depth (i.e., DBIR) 3D media to Broadcast quality.

The various inventive depth mapping solutions and novel techniques, when applied to 3D content media provided by a conventional 3D 3DVC, unexpectedly result in a "remastering" of the 3DVC server, thus constituting an entirely new commercial application of a conventional 3D technology package "fused" with various novel solutions offered by the present invention, and therefore providing a breakthrough opportunity to produce 3D 2D+Depth stereoscopic 3D content media having maximum depth 3D visual impact, but without distracting visual artifacts.

In addition, it should be noted that while a conventional 3DVC server is most commonly used to convert 2D content to 2D+Depth 3D content utilizing one or more DBIR techniques, it is also capable of converting dual path stereoscopic optical signals to a 2D+Depth format (or equivalent thereof), and is also capable of converting stereoscopic side-by-side and field sequential stereoscopic 3D video, into a 2D+Depth format (or equivalent thereof). Fortunately, the various techniques and solutions of the present invention are fully applicable for advantageous utilization in connection with any and all of the aforementioned conversion formats which are supported by the 3DVC server.

Essentially the system and method of the present invention have gone one step further and readily serve as a basis for producing a 3D software solution (that may be optionally augmented with, or replaced by, a hardware component) that is capable of grabbing stereoscopic pairs from a nine multiview 2D+Depth conversion, and reformatting them back into a side-by-side, or a dual-path conventional 3D signal, for viewing the reformatted 3D content media using stereoscopic 3D glasses. Accordingly, the inventive techniques close the loop, and allow the use of a conventional 3DVC server to convert 2D content media not only into a 2D+Depth format, utilizing one or more DBIR techniques, but to also automatically convert 2D content media into highly desirable and commercially viable stereoscopic 3D medial content that is necessary for all 3D glasses-based display systems, large and small, thereby enabling a highly attractive and cost effective solution to be offered during the inevitable transition between from 3D glasses-based display systems to ASD systems.

When the above-described combined technology package (hereinafter referred to as a "3DF-3DVC system") is used with conventional and/or novel 3D display tool adjustments and settings, (which, in accordance with the present invention may be readily embedded into a 3D content media file (and optionally recorded/captured "on-the-fly")), the resulting output not only corrects any remaining 3D video image issues/flaws, but will at the same time provide the basis for development and implementation of various guidelines and tools for rapidly effecting a major increase in the impact of the depth perspective visuals in the display of various available and future 3D content media, thus establishing the methodology and infrastructure that is required for widespread production and proliferation of 3D stereoscopic video broadcast quality standards.

For example, various inventive 3DF-3DVC system techniques may be employed in all of 3DVC server applications to effectively upgrade the 3D content media quality through "Re-mastering." When these techniques are applied to pre-converted 2D+Depth, s3D 3D video clips, which may have been produced utilizing one or more DBIR techniques, and designed for display on conventional commercially available 3D ASD screens, advantageously, the issues of depth error correction, cone double image removal and ghosting artifacts may be corrected, and therefore eliminated.

As a result, in view of all of the above, the use of various embodiments of the inventive system and method (or of portions thereof), enables companies to offer, and consumers and other end-user parties to experience, 3D content media in a very cost-effective and efficient manner, thus overcoming the flaws and drawbacks of all prior 3D-related offerings that served as barriers to the well-deserved success of the 3D media experience market, and making inexpensive and ready availability of the "3D experience" a reality.

Thus, while there have been shown and described and pointed out fundamental novel features of the inventive system and method as applied to preferred embodiments thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices and methods illustrated, and in their operation, may be made by those skilled in the art without departing from the spirit of the invention. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same gray to achieve the same results are within the scope of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

We claim:

1. A method, implemented in at least one Depth Based Image Rendering (DBIR) data processing system, for improving the efficiency, quality, viewing comfort and/or visual impact of a 3D experience capable of being provided to at least one viewer of a 3D content media comprising a plurality of content sections in 2D+Depth format, in conjunction with the use of at least a portion of a plurality of predetermined 3D content modification techniques, the method comprising the steps of:

(a) identifying at least one content section of the 3D content media comprising at least one 3D media element and selecting at least one corresponding predefined plural 3D content modification technique that is configured for provision of optimum improvement of the 3D experience when applied thereto;

(b) for each said selected at least one predefined plural 3D content modification technique configured for then-current application to said corresponding at least one 3D media element, applying said selected at least one predefined plural then-current 3D content modification technique thereto;

(c) for each said selected at least one predefined plural 3D content modification technique configured for future application to said corresponding at least one 3D media element, determining a setting for at least one param-

eter of said selected at least one predefined plural future 3D content modification technique, optimal for application to said corresponding at least one 3D media element;

(d) associating a reference to said selected at least one predefined plural future 3D content modification technique and said determined at least one optimal parameter, with said corresponding at least one 3D media element;

(e) selectively repeating said steps (a), b), (c) and (d) for at least one additional section of the 3D content media;

(f) selectively enabling an operator to view results of said steps (a), (b), (c), (d), and (e), and to at least one of: selectively cancel at least one result of at least one operation previously performed at least one of said steps (a), (b), (c), (d), and (e), and selectively change at least one operation previously performed at least one of said steps (a), (b), (c), (d), and (e), to an alternate operation selected by the operator; and

(g) after conclusion of said step (f), generating dynamic 3D content media data configured for playback to at least one viewer utilizing at least one 3D content playback system operable to apply said selected at least one predefined plural future 3D content modification technique to said corresponding at least one 3D media element in accordance with said at least determined at least one optimal parameter, and further configured to store, for each 3D content media element identified at said step (a), at least one of:

at least one immediate 3D content modification applied at said step (b), and

at least one said associated reference to said at least one corresponding predefined plural future 3D content modification technique, and said determined at least one optimal parameter therefor;

such that said dynamic 3D content media data comprises 3D media content having at least one modified content section each comprising at least one modification specifically optimal for application thereto, thereby maximizing the efficiency, quality, viewing comfort and/or visual impact of the 3D experience being provided to viewers thereof during playback.

2. The method of claim 1, wherein the 3D content media comprises at least one of stereoscopic 3D content and auto-stereoscopic 3D content.

3. The method of claim 1, wherein the 3D content media comprises at least one of: first 3D content media previously captured by at least one 3D content capture system, second 3D content media previously generated by at least one 3D content source, third 3D content media previously converted, by a 3D content capture system from captured 2D media content, and fourth 3D content media previously converted, by a 3D content source, from previously generated 2D content.

4. The method of claim 1, wherein said at least one content section of the 3D content media, identified at said step (a), comprises a plurality of content frames comprising said 3D media element.

5. The method of claim 4, wherein said plurality of content frames comprise a corresponding scene, and wherein said 3D media element comprises at least one of a static 3D displayed object and a moving 3D displayed object.

6. The method of claim 1, wherein said 3D content playback system comprises at least one of: a 3D content media player operable to process said dynamic 3D content media data for playback by generating therefrom and transmitting a 3D content output signal to a corresponding connected 3D content display system, and a 3D content display system operable to process said dynamic 3D content media data for playback by generating therefrom, and displaying said 3D content output signal.

7. The method of claim 6, wherein said 3D content playback system is operable to apply each said at least one predefined plural future 3D content modification technique to said corresponding at least one 3D media element of said 3D content media, in accordance with said at least one optimal parameter therefor, further comprising the steps of:

(h) providing said dynamic 3D content media data, generated at said step (f), to said at least one 3D content playback system;

(i) identifying, by said at least one 3D content playback system in said dynamic 3D content media data, at least one said associated reference to said at least one corresponding predefined plural future 3D content modification technique, and said determined at least one optimal parameter therefor; and

(j) applying said at least one referenced corresponding predefined plural future 3D content modification technique to said corresponding at least one 3D media element of said 3D content media, in accordance with said at least one optimal parameter therefor.

8. The method of claim 1, wherein said plurality of predetermined 3D content modification techniques further comprise a plurality of content modification techniques operable to optimize at least one additional visual characteristic of the 3D content media, further comprising the steps of, prior to said step (e):

(k) identifying at least one content section of the 3D content media comprising at least one visual characteristic, and selecting at least one corresponding predefined plural content modification technique that is configured for provision of optimum improvement of the 3D experience when applied thereto; and

(l) for each said selected at least one predefined plural content modification technique configured for immediate application to said corresponding at least one content section applying said selected at least one predefined plural immediate content modification technique thereto.

9. The method of claim 8, wherein said step (e) further comprises the step of:

(m) selectively repeating said steps (k) and (l) for at least one additional content section of the 3D content media.

10. The method of claim 8, further comprising the steps of, after said step (k) and prior to said step (e):

(n) for each said selected at least one predefined plural content modification technique configured for future application to said corresponding at least one content section, determining a setting for at least one parameter of said selected at least one predefined plural future content modification technique, optimal for application to said corresponding at least one content section; and

(o) associating a reference to said selected at least one predefined plural future content modification technique and said determined at least one optimal parameter, with said corresponding at least one content section.

11. The method of claim 10, wherein said step (e) further comprises the step of:

(p) selectively repeating said steps (n) and (o) for at least one additional section of the 3D content media.

12. The method of claim 10, wherein said at least one 3D content playback system is operable to apply said at least one corresponding predefined plural future content modifi-

cation technique to at least one predetermined future content section of said 3D content media, in accordance with said at least one optimal parameter therefor, further comprising the steps of:

(q) providing said dynamic 3D content media data, generated at said step (f), to said at least one 3D content playback system;

(r) identifying, by said at least one 3D content playback system in said dynamic 3D content media data, at least one said associated reference to said at least one corresponding predefined plural future content modification technique, and said determined at least one optimal parameter therefor; and

(s) applying said at least one referenced corresponding predefined plural future content modification technique to at least one predetermined future content section of said 3D content media, in accordance with said at least one optimal parameter therefor.

13. The method of claim 12, wherein said step (q) comprises the step of:

(t) streaming said dynamic 3D content media data, generated at said step (f), to said 3D content playback system from a remote 3D content source.

14. The method of claim 12, wherein said dynamic 3D content media data is stored on physical media operable to store 3D content media playback data, and wherein step (q) comprises the step of:

(u) transmitting said dynamic 3D content media data, generated at said step (f), to said at least one 3D content playback system from said corresponding physical media.

15. The method of claim 1, wherein the at least one data processing system operable to perform said steps (a), (b), (c), (d), and (e), is connected to said at least one 3D content playback system.

16. The method of claim 1, wherein said at least one 3D content playback system comprises the at least one data processing system operable to perform said steps (a), (b), (c), (d), and (e).

17. The method of claim 1, wherein the at least one data processing system is operable to perform said steps (a), (b), (c), (d), (e), and (f), prior to playback of said dynamic 3D content media data, further comprising the step of:

(v) after said step (f), storing said dynamic 3D content media data, on physical media operable to store 3D content media data, for later playback by said at least one 3D content playback system.

18. The method of claim 1, wherein the at least one data processing system is operable to perform said steps (a), (b), (c), (d), (e), and (f), in conjunction with playback of said dynamic 3D content media data by said at least one 3D content playback system.

19. The method of claim 1, wherein said dynamic 3D content media data includes a container file.

20. A method, implemented in at least one Depth Based Image Rendering (DBIR) data processing system, for improving the efficiency, quality, viewing comfort and/or visual impact of a 3D experience capable of being provided to at least one viewer of a 3D content media comprising a plurality of content sections in 2D+Depth format, in conjunction with the use of at least a portion of a plurality of predetermined 3D content modification techniques, the method comprising the steps of:

(a) identifying at least one content section of the 3D content media comprising at least one 3D media element and selecting at least one corresponding predefined plural 3D content modification technique that is configured for provision of optimum improvement of the 3D experience when applied thereto;

(b) for each said selected at least one predefined plural 3D content modification technique configured for then-current application to said corresponding at least one 3D media element, applying said selected at least one predefined plural then-current 3D content modification technique thereto;

(c) for each said selected at least one predefined plural 3D content modification technique configured for future application to said corresponding at least one 3D media element, determining a setting for at least one parameter of said selected at least one predefined plural future 3D content modification technique, optimal for application to said corresponding at least one 3D media element, wherein the at least one parameter includes at least one of 3D depth adjustment parameters, variable layer densities centered on display objects or object types, and dynamic variable resolution based on relative distance of the closest object depth layers to the viewer;

(d) associating a reference to said selected at least one predefined plural future 3D content modification technique and said determined at least one optimal parameter, with said corresponding at least one 3D media element;

(e) selectively repeating said steps (a), b), (c) and (d) for at least one additional section of the 3D content media;

(f) selectively enabling an operator to view results of said steps (a), (b), (c), (d), and (e), and to at least one of: selectively cancel at least one result of at least one operation previously performed at least one of said steps (a), (b), (c), (d), and (e), and selectively change at least one operation previously performed at least one of said steps (a), (b), (c), (d), and (e), to an alternate operation selected by the operator; and

(g) after conclusion of said step (f), generating dynamic 3D content media data configured for playback to at least one viewer utilizing at least one 3D content playback system operable to apply said selected at least one predefined plural future 3D content modification technique to said corresponding at least one 3D media element in accordance with said at least determined at least one optimal parameter, and further configured to store, for each 3D content media element identified at said step (a), at least one of:

at least one immediate 3D content modification applied at said step (b), and

at least one said associated reference to said at least one corresponding predefined plural future 3D content modification technique, and said determined at least one optimal parameter therefor;

such that said dynamic 3D content media data comprises 3D media content having at least one modified content section each comprising at least one modification specifically optimal for application thereto, thereby maximizing the efficiency, quality, viewing comfort and/or visual impact of the 3D experience being provided to viewers thereof during playback.

* * * * *

Exhibit D

CONFIDENTIAL

TECHNOLOGY LICENSE AGREEMENT

This Technology License Agreement ("the Agreement") is entered into on May 1, 2010 ("the Effective Date") by and between Koninklijke Philips Electronics N.V., a Dutch corporation, having its registered office in Eindhoven, The Netherlands ("Philips") and 3DFusion Corporation, a Delaware corporation, having its registered office at 110 Wall Street, Suite 7-2, New York, NY 10005, United States of America ("3D Fusion").

In this Agreement, Philips and 3D Fusion are also referred to individually as a "Party" and collectively as the "Parties".

RECITALS

A. Philips has developed and/or owns certain technology and software related to 3D Technology.

B. Philips has developed valuable 3D Know-How and owns certain Intellectual Property Rights relevant to the 3D Technology.

C. 3D Fusion wishes to develop, manufacture and sell or otherwise dispose of 3D Displays, 3D Rendering Boxes, 3D Content Creation Tools and to provide 3D Content Services based on the 3D Technology.

D. On December 11, 2009 the Parties entered into a Confidentiality and Non-Disclosure Agreement covering the disclosure and exchange of confidential information in connection with the possible licensing by Philips of its 3D Technology to 3D Fusion.

E. 3D Fusion has requested from Philips a license under Philips' Intellectual Property Rights relating to the 3D Technology and has further requested Philips to disclose and make available 3D Know-How and software relating to the 3D Technology in order to enable 3D Fusion to develop, manufacture and sell or otherwise dispose of Licensed Products and 3D Content Services.

F. Philips is willing to grant 3D Fusion a license under the relevant Intellectual Property Rights and to disclose and make available 3D Know-How and software relating to the 3D Technology on the terms and conditions set forth in this Agreement.

The Parties hereby agree as follows:

1. DEFINITIONS

The following terms when used in this Agreement shall have the meanings ascribed thereto below:

"3D Display" means an auto-stereoscopic display configured to display images which a viewer perceives to be images extending in three dimensions that incorporates and/or that otherwise requires, the utilization of the Licensed Technology.

"3D Content Creation Tools" means software that incorporates and/or that otherwise requires, the utilization of the Licensed Technology, and which: (a) converts a two-dimensional content format (picture and / or video) into a content format that includes depth information and/or (b) renders a content format with depth information into a multiview content format suitable for playing on a 3D Display.

"3D Content Services" means all business activities of 3D Fusion and / or its Affiliates, that incorporate, and/or that otherwise require the utilization of the Licensed Technology, where within the framework of a service model, 3D applications are provided to its customers or to third parties on behalf of its customers, including, without limitation, manufacturing, installing and operating 3D systems and providing content to be displayed on such systems, but excluding per-unit sales of 3D Displays and 3D Rendering Boxes. For the avoidance of any doubt, the parties agree that 3D Content Services shall not include any business activities of 3D Fusion, where within the framework of a service model, 3D applications are provided to its customers or to third parties on behalf of its customers, including, without limitation, manufacturing, installing and operating 3D systems and providing content to be displayed on such systems, but which do not incorporate, and/or which do not otherwise utilize the Licensed Technology.

"3D Know-How" means technical information (tangible or intangible), whether in the form of unpatented inventions, drawings, algorithms, formulas, documents, product designs, procedures or methods, or current and accumulated skills or experience acquired (or which after the Effective Date may be acquired) by Philips in the field of 3D Technology which is owned or controlled by Philips. 3D Know-How includes but is not limited to designs and technical information listed in Schedule B.

"3D Rendering Boxes" means a hardware device, that incorporates and/or that otherwise requires, the utilization of the Licensed Technology, and that is meant to be connected to a 3D Display and capable of rendering multiview content out of 2D or 2D+depth content (pictures and/or video).

"3D Technology" means the field of 3D lenticular display design (including lens design, lens manufacturing, 3D module manufacturing, and 3D processing), 3D content creation, 3D formats (including 2D + depth) as developed by Philips, and that incorporates and/or that otherwise requires, the utilization of the Licensed Technology.

"Affiliate(s)" means any one or more legal entities: (i) owned or controlled by Philips or 3D Fusion, (ii) owning or controlling Philips or 3D Fusion, or (iii) owned or controlled by the legal entity owning or controlling Philips or 3D Fusion, but any such legal entity shall only be considered an Affiliate of Philips or 3D Fusion for as long as such ownership or control exists. For the purposes of this definition, a legal entity shall be deemed to own or to control another legal entity if more than 50% (fifty per cent) of the voting stock of the latter legal entity, ordinarily entitled to vote

in the meetings of shareholders of that entity (or, if there is no such stock, more than 50% (fifty per cent) of the ownership of or control in the latter legal entity) is held directly or indirectly by the owning or controlling legal entity.

"Agreement" means this Technology License Agreement between Philips and 3D Fusion, dated May 1, 2010, and includes any Schedules or Exhibits hereto and any permitted amendments to the main part of this Technology License Agreement or any Schedule or Exhibit hereto.

"Due Diligence Period" means the period following execution of this Agreement during which 3D Fusion shall perform the necessary due diligence on the Licensed Technology, as defined below, and shall be the earliest of: completion of the due diligence on the Licensed Technology, or forty five (45) days.

"Executable Code" means any part or all of the machine-executable version of the Licensed Software, which results from compiling the Source Code into Object Code and linking, loading or assembling (or other similar process), as required, the Object Code into machine language, executable form.

"Improvements" shall mean findings, improvements, enhancements, discoveries, inventions, additions, modifications, formulations, derivative works, or changes (whether or not patented or patentable) with respect to the Licensed Patents/Licensed Know-How developed by 3D Fusion or its Affiliates after execution of this Agreement and including but not limited to any Modification of the Licensed Software, that, with respect to Improvements to Licensed Know-How, could not have been created and/or developed without access to the Licensed Know-How made possible under this Agreement, and that, with respect to Improvements to Licensed Patents, are directed to any products, product components, or processes that could not be utilized in provision of any commercial products and/or services, without such products and/or services infringing at least one of the Licensed Patents.

"Intellectual Property Rights" means Patents, utility certificates, utility models, design rights, copyrights, database rights and all registrations, applications, renewals, extensions, combinations, divisions, continuations or reissues of any of the foregoing.

"Licensed Know-How" means the (technical) information (including trade secrets if applicable but excluding the Licensed Patents), drawings and other material relevant to the development and / or manufacture of 3D Displays, 3D Rendering Boxes and 3D Content Creation Tools, owned or controlled by Philips and which Philips is free to disclose and license without any obligation for payment or other consideration to a third party at the Effective Date, as specified in Schedule B.

"Licensed Patents" means: (a) the Patents owned by Philips as of the Effective Date as listed in Schedule A and, (b) any Patents which are filed within 3 years of the Effective Date, provided that: (i) the patentable subject matter of such Patents is directly related to 3D Technology and where the invention results directly from research and development activities funded by Philips Intellectual Property & Standards and further provided that, in respect of both (a) and (b), Philips has the free right to license such Patents, not requiring payment or other consideration to any third

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party and that such Patents have not been and are not to be submitted to and included in a patent pool supporting an international accepted standard (e.g. BD, HDMI, MPEG). Upon written request of 3D Fusion, Philips will amend Schedule A to insert therein such additional Licensed Patents under (a) and (b) above, and to provide written notice of each such amendment to 3D Fusion in a commercially reasonable time, but not greater than after sixty (60) days following such request.

"Licensed Products" means 3D Displays, 3D Rendering Boxes and 3D Content Creation Tools boxes to be developed, manufactured, sold or otherwise disposed of by 3D Fusion incorporating or using any of the Licensed Patents, Licensed Software or Licensed Know-How and in accordance with the provisions hereof.

"Licensed Software" means the software provided by Philips to 3D Fusion as further described in Schedule B, and all copies or derivative works thereof that were created by Philips, or by any third party for the benefit of Philips.

"Licensed Technology" shall mean the Licensed Patents, Licensed Know-How and Licensed Software.

"Modification" means any reconfiguration, alteration, enhancement, translation, transformation or other derivative work of the Licensed Software.

"Object Code" means all or any portion of the machine-readable or machine language version of the Licensed Software.

"Open Source Software" means any software that is licensed under Open Source License Terms. As illustrative examples, any software under any version of the GNU General Public License, the GNU Lesser General Public License, the Mozilla Public License, the Berkeley Software Distribution (BSD) license, the Apache Software License and the MIT/X11 license are regarded as Open Source Software.

"Open Source License Terms" means the terms in any license that require as a condition of use, modification and/or distribution of a work:

(a) the making available of source code or other materials preferred for modification, or
(b) the granting of permission for creating derivative works, or
(c) the reproduction of certain notices or license terms in derivative works or accompanying documentation, or
(d) the granting of a royalty-free license to any party under intellectual property rights regarding the work and/or any work that contains, is combined with, requires or otherwise is based on the work.

"Patent(s)" means any and all patents (including but not limited to patents of implementation, improvement, or addition, utility model and appearance design patents, and inventors certificates, as well as divisions, reissues, continuations, renewals, and extensions of any of these), applications for patents, and patents that may issue on such applications.

"Royalty Reporting Form" means a written statement in the form as attached hereto as Schedule D, signed by a duly authorized officer on behalf of 3D Fusion.

"Source Code" means the compilable and/or human-readable version of the Licensed Software, including without limitation, all comments and procedural code, associated flow charts, concepts, algorithms, technology and other written instructions.

2. GRANT OF RIGHTS

2.1 Subject to 3D Fusion's compliance with its obligations under this Agreement, for the breach of which, Philips has the right of termination thereof under Section 5.2, below, Philips hereby grants to 3D Fusion and its Affiliates, during the term of this Agreement, a worldwide non-exclusive, non-transferable license, without the right to grant sub-licenses, under the Licensed Patents and the Licensed Know-How to: (a) use, sell, offer to sell, import, export, and otherwise dispose of the Licensed Products, and (b) lease, operate or otherwise make available to customers thereof, the Licensed Products, including the right to utilize any Licensed Products to provide services relating to 3D Content Services to any third party.

The rights granted to 3D Fusion pursuant to this Section 2.1 include the right for 3D Fusion to have Licensed Products manufactured in whole or in part by a third party manufacturer, provided that:

(i) 3D Fusion notifies Philips of the grant of such right to manufacture;
(ii) 3D Fusion will properly identify such third party manufacturer, the specific manufacturing facility(ies) and location(s);
(iii) 3D Fusion will indicate the quantities of Licensed Products so manufactured and purchased in the Royalty Reporting Form to be submitted to Philips hereunder; and
(iv) 3D Fusion warrants that it has entered into a legally binding arrangement with such third party manufacturer whereby such third party manufacturer is bound to the same confidentiality obligations, as well as the undertaking not to 'reverse engineer', as set forth in this Agreement.

3D Fusion acknowledges and accepts that any breach by the third party manufacturer of the applicable obligations that directly results from a breach by 3DF Fusion of the warranty under Section 2.1(iv), shall be considered a breach by 3D Fusion under this Agreement, which 3D Fusion will have full opportunity to cure in accordance with the applicable terms and conditions thereof.

2.2 Subject to 3D Fusion's compliance with its obligations under this Agreement, for the breach of which, Philips has the right of termination thereof under Section 5.2, below, Philips hereby grants to 3D Fusion and its Affiliates, a non-exclusive, non-transferable license under the Licensed Software to:

a. test, evaluate, and make derivative works of the Source Code portions of the Licensed Software and to compile such Source Code portions and derivative works thereof into Object Code, solely as strictly necessary to achieve, or to enhance, interoperability between the Licensed Software (including any Modification thereof) and the subsequent integration of the Licensed Software (including any Modification thereof) in the Licensed Products;

b. test, evaluate, and reproduce the Object Code portions of the Licensed Software for integration of the Licensed Software (including any Modification thereof), in Executable Code form only, in the Licensed Products;

c. test, demonstrate, license or otherwise commercially exploit the Licensed Products to its customers, for subsequent distribution to, and ultimate use thereof by end-users;

d. maintain and support Licensed Products sold or licensed to its customers, including, but not limited to, by performing error-correction and/or technical support on the Licensed Software (including any Modification thereof) integrated in these Licensed Products, and by testing and evaluating the integrated Licensed Software; and

e. make as many copies of the Licensed Software (including any Modification thereof) as reasonably required for exercise of the rights granted under this Agreement.

2.3 The rights granted to 3D Fusion hereunder shall include the right of any 3D Fusion customer to use the Licensed Software (including any Modification thereof) integrated in Executable Code form only for its own personal use or within its normal business operations, and such right of use shall survive the expiration or termination of this Agreement.

2.4 3D Fusion acknowledges that it has been informed by Philips that the Licensed Software contains certain Open Source Software and that there may be Open Source Software that has not been specifically identified to 3D Fusion. 3D Fusion shall be solely responsible for compliance with any and all applicable Open Source License Terms.

Specifically, but without limitation, 3D Fusion shall ensure that appropriate notices are included in documentation and that source code is delivered to all those to whom 3D Fusion distributes the software where the license provisions of such Open Source Software so require.

2.5 3D Fusion further acknowledges that it has been informed by Philips that the Licensed Software operates in combination with certain commercial software, developed and owned by third parties and that there may be third party commercial software that has not been specifically identified to 3D Fusion. 3D Fusion shall be solely responsible for compliance with any and all applicable licence terms and of any such third party commercial software (including, without limitation, payment of royalties, if applicable).

2.6 It is expressly acknowledged and agreed that the Licensed Software is licensed to 3D Fusion and not sold. It is further acknowledged and agreed that Philips owns and shall continue to own all rights, title and interest in the Licensed Software, as well as all derivative works of each of the foregoing that were created by Philips, or by any third party for the benefit of Philips, except as expressly set forth otherwise in this Agreement. 3D Fusion shall take all reasonable measures to protect Philips'

(intellectual) property rights in at least the same way as 3D Fusion protects its own rights, but shall have no obligation whatsoever to take any affirmative action to enforce any intellectual property and/or related rights granted thereto under this Agreement. Other than the limited license granted to 3D Fusion hereunder, no other right or license under any intellectual property rights of Philips and/or its Affiliates or any intellectual property residing in the Licensed Software is granted and any implied licenses are expressly excluded.

2.7 To the maximum extent permitted by applicable law, 3D Fusion shall not, and shall not permit any third party under its direction or control, to:

a. copy, reproduce or distribute Licensed Software (including any Modification thereof), other than in a form incorporated in Licensed Products or 3D Content Services as specifically permitted under this Agreement;
b. assign, sub-license, lease, rent, loan, transfer, disclose, or otherwise make available the Licensed Software other than in a form incorporated in Licensed Products, or in 3D Content Services (including any Modification thereof), and/or as otherwise specifically permitted under this Agreement; or
c. remove or circumvent the protection of the Licensed Software.

2.8 3D Fusion shall not perform any actions with regard to the Licensed Software in a manner that would require the Licensed Software or any derivative work thereof to be licensed under Open Source License Terms. These actions shall include without limitation:

(a) combining the Licensed Software or a derivative work thereof with Open Source Software, by means of incorporation or linking or otherwise; or
(b) using Open Source Software to create a derivative work of the Licensed Software.

2.9 3D Fusion shall not remove or alter any copyright notices or other proprietary rights notices, legends or marking(s) contained in or affixed to the Licensed Software provided hereunder (including any Modifications thereof). 3D Fusion shall reproduce such notices, legends and marking(s) and shall affix such notices, legends and marking(s) to any and all media containing a copy or any portion of the Licensed Software provided hereunder (including any Modifications thereof), in the same manner as these were affixed to the original media.

2.10 3D Fusion shall not make, nor permit its customers to make, or publish any representations, warranties, or guarantees on behalf of Philips, its Affiliates and/or its third party suppliers/licensors in relation to the Licensed Software without Philips' express prior written consent.

2.11 In the event that 3D Fusion owns any intellectual property rights relevant to the Licensed Technology ("3DF IP Rights"), 3D Fusion undertakes that, upon the request of Philips, unless doing so would conflict with then-existing obligations of 3D Fusion to any third party, it will negotiate in good faith with Philips and or its Affiliates for a license under such 3DF IP Rights on commercially reasonable, non-discriminatory terms and to use such 3DF IP Rights in the exploitation of the Licensed Technology (including Improvements thereof). For avoidance of any doubt, 3DF IP Rights shall

be considered relevant to the Licensed Technology, if the 3DF IP Rights are directed to creation of new products based thereon that are intended for being utilized in conjunction with the Licensed Products, but: (a) that could have been created and/or developed without need for access to the Licensed Know-How made possible under this Agreement, and/or (b) that do not in themselves infringe any of the Licensed Patents.

2.12 3D Fusion shall notify Philips promptly of any Improvement(s) to the Licensed Technology. In consideration of the undertaking set forth in Section 2.1, 3D Fusion agrees to grant to Philips and its Affiliates a non-exclusive non-transferable, non-sublicensable license, to use the licensed Improvements and to develop, manufacture, license, sell or otherwise dispose of any Licensed Products embodying such Improvement(s) to the Licensed Technology or manufactured using any such Improvement(s), on commercially reasonable non-discriminatory terms.

2.13 Philips shall exclude any abandoned pending Patent applications and any abandoned Licensed Patents from Schedule A.

3. DELIVERY OF LICENSED KNOW-HOW AND LICENSED SOFTWARE

3.1 Upon receipt by Philips of the first instalment of the amount specified in Section 4.1, Philips will make available the Licensed Know-How and Licensed Software to 3D Fusion in accordance with a jointly defined and mutually agreed hand-over plan. Such delivery may occur by means of access to a server, electronic transfer, delivery of a storage medium or by such other means as agreed by the Parties.

4. PAYMENT AND REPORTING

4.1 In consideration of the delivery of the Licensed Know-How and the Licensed Software, 3D Fusion shall make a non-refundable, non-recoupable payment of US$5,000,000 (five million US Dollars) to Philips, payable 50% within 45 days of the Effective Date, 25% by January 15, 2011 and 25% by November 15, 2011.

4.2 In further consideration of the rights granted hereunder by Philips to 3D Fusion, for all Licensed Products developed, manufactured, sold or otherwise disposed of as from January 1, 2013, 3D Fusion shall pay to Philips a royalty in accordance with the table set forth in Schedule C (a) on each Licensed Product manufactured, licensed or sold or otherwise disposed of, and (b) on each Licensed Product leased, operated for the benefit of, or otherwise made available to, customers thereof, as well as on 3D Content Services provided by 3D Fusion, with a minimum of €100,000 (one-hundred thousand Euros) per calendar year. If 3D Fusion fails to pay to Philips said minimum royalty for two consecutive calendar years, Philips may terminate this Agreement with thirty (30) days written notice to 3D Fusion, unless 3D Fusion remedies its failure to pay the minimum royalties due to Philips under this Agreement within said notice period. Such right to terminate shall be without prejudice to any other right or remedy Philips may have against 3D Fusion.

Royalties shall be due and payable on all Licensed Products manufactured prior to, but remaining in stock at the date of expiration or termination of this Agreement. Within 30 days after expiration or termination of this Agreement 3D Fusion shall submit to Philips a Royalty Reporting Form stating the number of Licensed Products in stock at the time of expiration or termination of this Agreement.

4.4 All payments by 3D Fusion to Philips under this Agreement shall be made in US Dollars to the US Dollar account with:

CITIBANK in New York
Bank Account No.: 406711-1001
in the name of: Koninklijke Philips Electronics N.V. –Licenses
SWIFTCODE: CITIUS33 021000089
Reference: “3D Display Technology, LP25049”

(or such other bank account as Philips may specify)

4.5 Within 30 days following 31 March, 30 June, 30 September and 31 December of each year during the term of this Agreement, 3D Fusion shall submit to Philips (even in the event that no Licensed Products have been manufactured, licensed, sold or otherwise disposed of and that no 3D Content Services have been provided by 3D Fusion) a Royalty Reporting Form, duly completed and signed by an authorized representative of 3D Fusion.

4.7 3D Fusion shall pay the royalties due to Philips hereunder within 30 calendar days after the end of each calendar quarter during the term of this Agreement.

4.8 In no event shall 3D Fusion have the right to set off any payments due hereunder against any claim, of whatever nature, it or any of its Affiliates may have against Philips or any of Philips’ Affiliates.

4.9 Any payment under this Agreement that is not made on or before the date(s) specified herein, shall accrue interest at the rate of 2% (two per cent) per month (or part thereof), or the maximum amount permitted by law, whichever is lower, without any notification being required.

4.10 Each Party shall bear its own costs, stamp duties, taxes and other similar levies arising from or in connection with this Agreement. In the event that the governmental authorities of any country imposes any withholding taxes on payments made by 3D Fusion to Philips hereunder and requires 3D Fusion to withhold such tax from such payments, 3D Fusion may deduct such tax from such payments. In such event, 3D Fusion shall promptly provide Philips with tax receipts issued by the relevant tax authorities.

4.11 3D Fusion shall submit to Philips, within 90 calendar days after the end of 3D Fusion’s fiscal year, an audit statement, signed by its external auditors, who shall be qualified accounting professionals (preferably, certified public auditors), confirming that all quarterly royalty statements as submitted by 3D Fusion to Philips during the preceding fiscal year, are true, complete and accurate in every respect. The correctness of this audit statement may be verified by Philips by means of a work

paper review, conducted by one of the certified public auditors selected by Philips. 3D Fusion shall procure that its auditors provide full cooperation with said work paper review. This audit statement shall not affect the right of Philips to inspect the books and records of 3D Fusion from time to time in accordance with Section 4.12.

4.12 In order that the royalty statements provided for in this Section 4 may be verified, 3D Fusion shall keep complete and accurate books and records relating to the manufacture and sale or other disposal of Licensed Products and shall keep the books and records available for a period of 5 (five) years following the manufacture, sale or other disposal of each Product.

Philips shall have the right to inspect the books and records of 3D Fusion from time to time, in order to verify the correctness of the aforementioned royalty statements. Any such inspection shall take place no more than once per calendar year and shall be conducted by a certified public auditor appointed by Philips. Philips shall give 3D Fusion written notice of such inspection at least 14 calendar days prior to the inspection. 3D Fusion shall willingly co-operate and provide all such assistance in connection with such inspection as Philips and/or the auditor may require. The inspection shall be conducted at Philips' own expense, provided that, in the event that 3D Fusion has failed to submit royalty statements and/or yearly written statement(s) by its external auditors, as provided for in Section 4.11 and this Section 4.12 in respect of the period to which the inspection relates or in the event that any discrepancy or error of 3% (three per cent) or more of the monies actually due is established, the cost of the inspection shall be borne by 3D Fusion, without prejudice to any other claim or remedy as Philips may have under this Agreement or under applicable law.

4.13 Philips' right inspection as set out in Section 4.12 shall survive termination or expiration of this Agreement for 3 (three) years after termination or expiration of this Agreement.

4.14 Without limiting any other provision of this Agreement, 3D Fusion shall provide all relevant additional information as Philips may reasonably request from time to time, so as to enable Philips to ascertain that 3D Fusion has correctly paid the royalties on Licensed Products and 3D Content Services due hereunder.

4.15 Any information provided by 3D Fusion to Philips or its auditors under this Section 4 in writing and marked as Confidential shall be treated by Philips as confidential, save that the foregoing shall not prevent Philips from using such confidential information in connection with the enforcement of its rights under this Agreement.

5. TERM AND TERMINATION

5.1 This Agreement shall enter into force on the Effective Date and shall remain in force until the transfer, expiration or invalidation of the last remaining Licensed Patent, unless terminated earlier in accordance with its provisions.

5.2 Without prejudice to Section 5.3, a Party may terminate this Agreement at any time by means of written notice to the other Party in the event that the other Party breaches or otherwise fails to perform any of its obligations under this Agreement, provided that such breach or failure is not remedied within 30 (thirty) calendar days after receipt of a notice specifying the nature of such failure and requiring it to be remedied. Such right of termination shall not be exclusive of any other remedy or means of redress to which the non-defaulting Party may be lawfully entitled and all such remedies shall be cumulative.

5.3 Philips may terminate this Agreement forthwith by means of notice in writing to 3D Fusion in the event that:

a) a creditor or other claimant takes possession of, or a receiver, administrator or similar officer is appointed over any of the assets of 3D Fusion;

b) 3D Fusion makes any voluntary arrangement with its creditors or 3D Fusion becomes subject to any court or administration order pursuant to any bankruptcy or insolvency law; or

c) 3D Fusion or any of its Affiliates brings a claim of infringement of any of 3D Fusion's, or any of 3D Fusion's Affiliates', Patent(s), in connection with which 3D Fusion has obligations under Section 2.11 and/or Section 2.12 of this Agreement, against Philips or any of Philips' Affiliates, and 3D Fusion refuses to license such Patent(s) on commercially reasonable and non-discriminatory conditions, as provided in Section 2.11 and/or Section 2.12 of this Agreement.

3D Fusion may terminate this Agreement at the end of the Due Diligence Period by means of notice in writing to Philips.

5.4 Any termination or expiration shall not affect any royalty payment or other obligation under this Agreement accrued prior to such termination, except in the event of termination by 3D Fusion pursuant to Section 5.3, in which case 3D Fusion shall not be obliged to pay the amounts set forth in Section 4.1.

5.5 Upon the termination of this Agreement by either party for any reason pursuant to the provisions hereof, the licenses granted by Philips to 3D Fusion and its Affiliates under the Licensed Patents and Licensed Know-How shall automatically terminate and 3D Fusion shall immediately cease and procure that its Affiliates cease, the (a) use of the Licensed Patents, Licensed Know-How and Licensed Software, and (b) development, manufacture, licensing, sale or other disposal of Licensed Products and the provision of 3D Content services. Further, upon such termination, any and all amounts outstanding hereunder shall become immediately due and payable.

In the event of termination by 3D Fusion pursuant to Section 5.3, 3D Fusion shall forthwith return to Philips any and all Licensed Know-How received during the Due Diligence Period.

5.6 Upon the termination of this Agreement by either party for any reason pursuant to the provisions hereof, any license to the Improvements to the Licensed Patents, Licensed Know-How and Licensed Software that may have been granted to Philips and its Affiliates under Section 2.12, shall likewise immediately terminate on the effective

termination date of this Agreement. Accordingly, as of the effective date of termination of this Agreement, Phillips and its Affiliates shall immediately (a) cease the use of the any Improvements to the Licensed Patents, Licensed Know-How and Licensed Software, and (b) cease development, manufacture, licensing, sale or other disposal of any Philips products and/or services utilizing or otherwise incorporating the Improvements.

5.7 If any license(s) to 3DF IP Rights were granted to Philips and/or its Affiliates under Section 2.11 of this Agreement, upon the termination of this Agreement by either party for any reason pursuant to the provisions hereof, 3D Fusion shall have the right, exercisable within 60 (sixty) calendar days thereof, at its sole and exclusive discretion, to terminate any such license to the 3DF IP Rights. If 3D Fusion exercises this termination right, then Phillips and/or its Affiliates shall immediately: (a) cease the use of the 3DF IP Rights, and (b) cease development, manufacture, licensing, sale or other disposal of any Philips products and/or services utilizing or otherwise incorporating the 3DF IP Rights.

6. CONFIDENTIALITY

6.1 3D Fusion shall during the term of this Agreement and for a period of 5 (five) years thereafter, not disclose to any third party any information acquired from Philips or any of Philips' Affiliates in connection with this Agreement, or use such information for any other purpose than the (a) development, manufacture, licensing, and sale of Licensed Products in accordance with this Agreement, and (b) manufacture and use of 3D Content Creation Tools in accordance with this Agreement, or (c) provision of 3D Content Services in accordance with this Agreement. This obligation shall not apply to the extent information so acquired:

a) was known to 3D Fusion prior to the date on which such information was acquired from Philips or any of Philips' Affiliates, as shown by records of 3D Fusion or otherwise demonstrated to Philips' satisfaction within 14 calendar days following the disclosure of such information by Philips;
b) is or becomes part of the public domain through no fault of 3D Fusion; or
c) is lawfully obtained by 3D Fusion from a third party who was, at the moment of disclosure, not bound by similar confidentiality obligations.

6.2 3D Fusion shall protect all information acquired from acquired from Philips or any of Philips' Affiliates against any unauthorized disclosure in the same manner and with the same degree of care, but not less than a reasonable degree of care, with which it protects confidential information of its own.

6.3 3D Fusion acknowledges that the Source Code of the Licensed Software contains valuable, proprietary trade secrets of Philips, and 3D Fusion agrees to:

a. ensure that every person with access to the Source Code of the Licensed Software has signed a written confidentiality agreement, prior to any such access, which is legally sufficient and effective to bind such person to all of the confidentiality obligations of Section 6;

b. not allow any remote access to the Source Code of the Licensed Software, and not place or permit to be placed on any public website; and

c. promptly notify Philips of any unauthorized access to the Source Code of the Licensed Software, or any unauthorized use or disclosure of the Source Code of the Licensed Software.

6.4 The obligations concerning confidentiality contained in this Section 6 shall survive termination of this Agreement.

7. NO WARRANTY AND LIABILITY

7.1 The Licensed Patents, Licensed Know-How, Licensed Software and all information made available by Philips under this Agreement are provided on an "AS IS" basis. Philips makes no representation or warranty as to the validity of the Licensed Patents, or the suitability of the Licensed Patents, Licensed Know-How and/or Licensed Software for any particular purpose (including without limitation, providing the 3D Content Services) nor with regard to the ability of 3D Fusion to develop, manufacture and sell or otherwise dispose of Licensed Products using the Licensed Patents, Licensed Know-How and/or Licensed Software, nor with regard to the quality and/or performance of such Licensed Products or otherwise in relation to the Licensed Patents, Licensed Know-How and/or Licensed Software.

7.2 It is acknowledged by 3D Fusion that third parties may own intellectual property rights in the field of 3D Technology, in Licensed Products, or in 3D Content Services. Philips makes no warranty whatsoever that the development, manufacture, sale or other disposal of Licensed Products and the provision of 3D Content Services does not infringe or will not cause infringement of any intellectual property rights other than the Licensed Patents.

7.3 Philips and its Affiliates shall not be liable for any damages of whatever nature howsoever resulting from the use of the Licensed Patents, Licensed Know-How and/or Licensed Software or otherwise in connection with this Agreement.

7.4 Philips and its Affiliates shall be fully indemnified and held harmless by 3D Fusion from and against any and all third party claims in connection with Licensed Products developed, manufactured, licensed, sold or otherwise disposed of by or for 3D Fusion or the provision of 3D Content Services by 3D Fusion.

7.5 In the event that a court of competent jurisdiction renders judgment against Philips and/or any of its Affiliates notwithstanding the limitation of liability as set out in this Section 7, in no event shall the aggregate liability of Philips and/or its Affiliates to 3D Fusion in connection with this Agreement, except for the liability for breach of section 5.6 hereof, exceed the lower amount of either the aggregate amount of the fees paid by 3D Fusion to Philips under this Agreement over the 12 months immediately preceding the event that gave rise to a claim.

7.6 Any claim for damages by 3D Fusion against Philips or any of Philips' Affiliates under or in connection with this Agreement must be filed within 12 months from the

date that 3D Fusion learns of the event giving rise to any such claim and Philips and its Affiliates shall not be liable for any claim for damages brought or filed by 3D Fusion after said 12 month period. Further, and notwithstanding anything to the contrary provided in this Agreement, other than the breach by Philips or any of its Affiliates of Section 5.6, in no event shall Philips or any of its Affiliates be liable vis-à-vis 3D Fusion, 3D Fusion's Affiliates or its/their customers for any damages of whatever nature after the expiration or early termination of this Agreement. For the avoidance of any doubt, the liability of Philips or any of its Affiliates for breach of Section 5.6, shall continue after the expiration or early termination of this Agreement, subject to applicable statutes of limitations of the governing jurisdiction set forth in Section 16.1.

7.7 Philips and its Affiliates shall not be liable to 3D Fusion, its employees, directors, shareholders, agents or any third party for any indirect or consequential, incidental, punitive or special, damages (including, but not limited to, damages for loss of profit, for business interruption or for personal injury) arising out of or in any way related to or in connection with this Agreement, even if the other Party has been advised of the possibility of such damages.

7.8 The foregoing states the entire liability of Philips and its Affiliates for any actual or alleged infringement of third party or 3D Fusion's Intellectual Property Rights hereunder.

8. EXCLUSIONS

Nothing contained in this Agreement shall be construed:

(a) as granting, by implication, estoppel or otherwise, a license to any intellectual property, know-how or trade secrets other than stipulated in Section 2.1;

(b) as a warranty or representation by Philips and/or its Affiliates as to the validity or scope of any patent rights licensed hereunder;

(c) as imposing any obligation to file any patent application, to secure any patent or to maintain any patent in force;

(d) as conferring any license or right to copy or imitate the appearance and/or design of any product of Philips or any of Philips' Affiliates;

(e) as conferring any right upon 3D Fusion and/or its Affiliates to use in advertising, publicity or otherwise, any trademark or trade name, or any contraction, abbreviation or simulation thereof, of Philips and/or its Affiliates; or

(f) as imposing on either Party any obligation to instigate any suit or action for infringement of any of the Licensed Patents or to defend any suit or action brought by any third party which challenges or relates to the validity of any such patents. 3D Fusion shall have no right to instigate any such suit or action for infringement of any of the Licensed Patents, nor to defend any suit or action which challenges or relates to the validity of any such Licensed Patents.

9. EXPORT CONTROLS

9.1 3D Fusion shall use the 3D Technology in accordance with export control laws and regulations applicable to the goods, countries and persons or entities that 3D Fusion is trading in or with. 3D Fusion represents and undertakes that the 3D Technology will not be exported or re-exported to any person or country prohibited under European or U.S. export control laws and regulations. 3D Fusion shall indemnify Philips against any claim or damages resulting from 3D Fusion's conduct in contravention of the aforementioned export control laws and regulations.

10. NOTICES

10.1 Any notice, other than the Royalty Reporting Forms, required under this Agreement to be sent by either Party shall be given in writing by means of a letter, facsimile directed:

in respect of Philips to:
Philips Intellectual Property & Standards
P.O. Box 220
5600 AE Eindhoven
The Netherlands
F.a.o. Licensing Director 3D Technology
Fax no.: + 31 40 27 45267

In respect of 3D Fusion to:
110 Wall Street, Suite 7-2
New York, NY 10005
United States of America
F.a.o. CEO
e-mail: ilya.sorokin@3dfusionusa.com

or such other address as may have been specified in writing by either Party to the other.

11. NO ASSIGNMENT

11.1 This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors and assigns. Notwithstanding the foregoing sentence, this Agreement may not be delegated or assigned by 3D Fusion, in whole or in part, to any third party, without the written consent of an authorized representative of Philips, whose consent shall not be unreasonably withheld. Philips may delegate or assign this Agreement to any third party, agreeing to take on all of the rights and obligations of Philips under this Agreement, upon 7 (seven) days written notice to 3D Fusion.

12. INDEPENDENT CONTRACTORS

12.1 The Parties are and intend to remain independent contractors. Nothing in this Agreement shall be construed as an agency, joint venture or partnership between the Parties.

13. ENTIRE AGREEMENT

13.1 This Agreement sets forth the entire understanding and agreement between the Parties as to the subject matter of this Agreement and supersedes, cancels and merges all prior agreements, negotiations, commitments, communications and discussions between the Parties as to the subject matter hereof.

13.2 Neither Party shall be bound by any obligation, warranty, waiver, release or representation, except as expressly provided herein, or as may subsequently be agreed by a written instrument, signed by duly authorized representatives of each of the Parties.

14. NO WAIVER

14.1 Neither the failure nor the delay of either Party to enforce any provision of this Agreement shall constitute a waiver of such provision or of the right of either Party to enforce each and every provision of this Agreement.

15. DISPUTE RESOLUTION

15.1 Any dispute as may arise between the Parties shall be elevated to senior management of the Parties with the aim to resolve such dispute within 45 days of written notice by either Party requesting such resolution, provided that nothing shall prevent either Party from reverting to a competent court to obtain injunctive relief if in such Party's opinion, such injunctive relief is necessary to prevent irreparable, material harm.

16. APPLICABLE LAW AND JURISDICTION

16.1 This Agreement shall be governed by and construed in accordance with the laws of The Netherlands.

16.2 Any dispute between the Parties in connection with this Agreement (including any question regarding its existence, validity or termination) shall be submitted to the competent courts of The Hague, The Netherlands, provided always that, in case Philips is the plaintiff, Philips may at its sole discretion submit any such dispute

either to the competent courts in the venue of 3D Fusion's registered office. 3D Fusion hereby irrevocably waives any objection to the jurisdiction, process and venue of any such court and to the effectiveness, execution and enforcement of any order or judgment (including, but not limited to, a default judgment) of any such court in relation to this Agreement, to the maximum extent permitted by the law of any jurisdiction, the laws of which might be claimed to be applicable regarding the effectiveness, enforcement or execution of such order or judgment.

AS WITNESS, the Parties have caused this Agreement to be signed on the date first written above.

Koninklijke Philips Electronics N.V.	3DFusion Corporation
_______________________	_______________________
(signature)	(signature)
R.J. Peters Chief Executive Officer, Philips Intellectual Property & Standards	Name: I. Sorokin Title: Chief Executive Officer

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Schedule A
Licensed Patents

Country	Application No	Priority Date	Filing Date	Publication No	Grant No	Philips Ref	Title
CN	200680014550.7	13-05-2005	02-05-2006	101176354-A		000382	Cost-effective rendering of 2.5D video signals on 3D displays
EP	06728110.1	13-05-2005	02-05-2006	1882368-A		000382	Cost-effective rendering of 2.5D video signals on 3D displays
JP	08-510669	13-05-2005	02-05-2006			000382	Cost-effective rendering of 2.5D video signals on 3D displays
US	11/913877	13-05-2005	02-05-2006	2008-0252635-A1		000382	Cost effective rendering of 2.5D video signals on 3D displays
CN	200680014611.5	29-04-2005	20-04-2006	101167371-A		000443	A 3D display with fractional views
EP	06727987.7	29-04-2005	20-04-2006			000443	A 3D display with fractional views
IN	4854/CHENP/2007	29-04-2005	20-04-2006			000443	A 3D display with fractional views
JP	08-508366	29-04-2005	20-04-2006			000443	A 3D display with fractional views
KR	10-2007-7024425	29-04-2005	20-04-2006			000443	A 3D display with fractional views
TW	095114920	29-04-2005	26-04-2006	200711462-A		000443	A 3D display with fractional views
US	11/912440	29-04-2005	20-04-2006	2008-0204550-A1		000443	A 3D display with fractional views
CN	200680025197.6	14-07-2005	12-07-2006			000496	2D/3D switchable display
EP	06780056.5	14-07-2005	12-07-2006	1905247-A		000496	2D/3D switchable display
JP	08-521019	14-07-2005	12-07-2006			000496	2D/3D switchable display
US	11/995574	14-07-2005	12-07-2006	2008-0204872-A1		000496	2D/3D switchable display
CN	200680021219.3	14-06-2005	13-06-2006			000497	Transflective Eink 3D LCD
EP	06756125.8	14-06-2005	13-06-2006	1894422-A		000497	Transflective Eink 3D LCD
JP	08-516414	14-06-2005	13-06-2006			000497	Transflective Eink 3D LCD
KR	10-2007-7029298	14-06-2005	13-06-2006			000497	Transflective Eink 3D LCD
TW	095120565	14-06-2005	09-06-2006	200705511-A		000497	Transflective Eink 3D LCD
US	11/917187	14-06-2005	13-06-2006	2008-0211734-A1		000497	Transflective Eink 3D LCD
CN	200680022544.1	21-06-2005	19-06-2006	101203881-A		001613	Method to store, transfer and identify 3D files
EP	06765730.9	21-06-2005	19-06-2006			001613	Method to store, transfer and identify 3D files
IN	5352/CHENP/2007	21-06-2005	19-06-2006			001613	Method to store, transfer and identify 3D files
JP	08-517662	21-06-2005	19-06-2006			001613	Method to store, transfer and identify 3D files
US	11/993338	21-06-2005	19-06-2006			001613	Method to store, transfer and identify 3D files
CN	200680033881.0	16-09-2005	11-09-2006	101263722-A		001626	Pixel Shapes for optimised 2D/3D display
EP	06809277.4	16-09-2005	11-09-2006	1929792-A		001626	Pixel Shapes for optimised 2D/3D display
JP	08-530655	16-09-2005	11-09-2006			001626	Pixel Shapes for optimised 2D/3D display
US	12/066682	16-09-2005	11-09-2006	2008-0218855-A1		001626	Pixel Shapes for optimised 2D/3D display
CN	200680036946.7	04-10-2005	03-10-2006	101278566A		001856	Improvement of lenticular design by applying light blocking feature
EP	06809476.2	04-10-2005	03-10-2006	1935186A		001856	Improvement of lenticular design by applying light blocking feature
JP	08-534128	04-10-2005	03-10-2006			001856	Improvement of lenticular design by applying light blocking feature
US	12/089215	04-10-2005	03-10-2006	2008-0259157-A1		001856	Improvement of lenticular design by applying light blocking feature
CN	200680036664.2	04-10-2005	28-09-2006	101278557		001857	A 3D display with an improved pixel structure (pixelsplitting)
EP	06809431.7	04-10-2005	28-09-2006			001857	A 3D display with an improved pixel structure (pixelsplitting)
JP	08-534120	04-10-2005	28-09-2006			001857	A 3D display with an improved pixel structure (pixelsplitting)
US	12/089212	04-10-2005	28-09-2006	2008-0231951-A1		001857	A 3D display with an improved pixel structure (pixelsplitting)
CN	200680045378.7	02-12-2005	27-11-2006	101322418-A		002322	Depth dependent filtering of image and depth to avoid artefacts with multiview rendering
EP	06831955.7	02-12-2005	27-11-2006	1958459-A		002322	Depth dependent filtering of image and depth to avoid artefacts with multiview rendering
JP	08-542900	02-12-2005	27-11-2006			002322	Depth dependent filtering of image and depth to avoid artefacts with multiview rendering
US	12/095176	02-12-2005	27-11-2006	2009-0153652-A1		002322	Depth dependent filtering of image and depth to avoid artefacts with multiview rendering
CN	200680041071.X	04-11-2005	31-10-2006	101300855-A		002323	Viewdirection dependent filtering for multiview screens
EP	06821266.1	04-11-2005	31-10-2006	1946566A		002323	Viewdirection dependent filtering for multiview screens
JP	08-536476	04-11-2005	31-10-2006			002323	Viewdirection dependent filtering for multiview screens.
US	12/091944	04-11-2005	31-10-2006	2008-0291268-A1		002323	Viewdirection dependent filtering for multiview screens
CN	200680047908.1	19-12-2005	08-12-2006	101341760-A		002324	Sparkling 3D rendering
EP	06832157.9	19-12-2005	08-12-2006	1967016-A		002324	Sparkling 3D rendering
JP	2008-545190	19-12-2005	08-12-2006			002324	Sparkling 3D rendering
US	12/097575	19-12-2005	08-12-2006	2009-0027384-A1		002324	Sparkling 3D rendering
CN	200680045321.7	02-12-2005	27-11-2006	101322155-A		002325	Depth from focus
EP	06831957.3	02-12-2005	27-11-2006	1958149-A		002325	Depth from focus
IN	2756/CHENP/2008	02-12-2005	27-11-2006			002325	Depth from focus
JP	08-542901	02-12-2005	27-11-2006			002325	Depth from focus
KR	10-2008-7016167	02-12-2005	27-11-2006			002325	Depth from focus
RU	2008126927	02-12-2005	27-11-2006			002325	Depth from focus
US	12/095183	02-12-2005	27-11-2006	2008-0303894-A1		002325	Depth from focus
CN	200680040799.0	02-11-2005	25-10-2006	101300519-A		002451	Multi-view 3D display without resolution loss and optical rendering
EP	06809698.1	02-11-2005	25-10-2006	1949170-A		002451	Multi-view 3D display without resolution loss and optical rendering
JP	08-536465	02-11-2005	25-10-2006			002451	Multi-view 3D display without resolution loss and optical rendering
US	12/092415	02-11-2005	25-10-2006	208-0278808-A1		002451	Multi-view 3D display without resolution loss and optical rendering
CN	200680041112.5	02-11-2005	26-10-2006	101300520-A		002452	Multi-view 3D display without resolution or brightness loss
EP	06809713.3	02-11-2005	26-10-2006			002452	Multi-view 3D display without resolution or brightness loss
IN	2163/CHENP/2008	02-11-2005	26-10-2006			002452	Multi-view 3D display without resolution or brightness loss
JP	08-536467	02-11-2005	26-10-2006			002452	Multi-view 3D display without resolution or brightness loss
US	12/092416	02-11-2005	26-10-2006	2008-0278808-A1		002452	Multi-view 3D display without resolution or brightness loss
CN	200680030138.1	19-08-2005	17-08-2006	101243694		002508	Fractional view filtering for 3D displays
EP	06795677.1	19-08-2005	17-08-2006	1922882A		002508	Fractional view filtering for 3D displays
IN	815/CHENP/2008	19-08-2005	17-08-2006			002508	Fractional view filtering for 3D displays
JP	08-526601	19-08-2005	17-08-2006			002508	Fractional view filtering for 3D displays
RU	2008110492	19-08-2005	17-08-2006			002508	Fractional view filtering for 3D displays
US	12/063859	19-08-2005	17-08-2006	2008-0225114-A1		002508	Fractional view filtering for 3D displays
CN	200680032882.3	09-09-2005	05-09-2006	101258427-A		002525	Painted LC material containing switchable lenticulars
EP	06795967.6	09-09-2005	05-09-2006	1927022-A		002525	Painted LC material containing switchable lenticulars
IN	1176/CHENP/2008	09-09-2005	08-09-2006			002525	Painted LC material containing switchable lenticulars
JP	08-529762	09-09-2005	05-09-2006			002525	Painted LC material containing switchable lenticulars
US	12/065775	09-09-2005	08-09-2006			002525	Painted LC material containing switchable lenticulars

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Country	Application No	Priority Date	Filing Date	Publication No	Grant No	Philips Ref	Title
CN	200580041977.1	05-11-2005	30-10-2006	101305511		002620	Moire reduction for displays
DE	06821145.5	05-11-2005	30-10-2006		602006009294.6	002620	Moire reduction for displays
FR	06821145.5	05-11-2005	30-10-2006		1949171	002620	Moire reduction for displays
GB	06821145.5	05-11-2005	30-10-2006		1949171	002620	Moire reduction for displays
JP	08-539550	05-11-2005	30-10-2006			002620	Moire reduction for displays
US	12/092572	05-11-2005	30-10-2006	2008-0316604 A1		002620	Moire reduction for displays
CN	200680040309.7	27-10-2005	23-10-2006	101297414 A		002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
EP	06821104.2	27-10-2005	23-10-2006	1943692		002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
IN	2082/CHENP/2008	27-10-2005	23-10-2006			002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
JP	08-537273	27-10-2005	23-10-2006			002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
US	12/091592	27-10-2005	23-10-2006	2008-0265282 A1		002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
CN	200680036553.8	28-09-2005	31-08-2006	101278567 A		002850	A 2D/3D switchable display with arbitrary 2D and 3D areas
DE	06795645.3	28-09-2005	31-08-2006		602006007368.2	002850	A 2D/3D switchable display with arbitrary 2D and 3D areas
FR	06795645.3	28-09-2005	31-08-2006		1932366	002850	A 2D/3D switchable display with arbitrary 2D and 3D areas
GB	06795645.3	28-09-2005	31-08-2006		1932366	002850	A 2D/3D switchable display with arbitrary 2D and 3D areas
IN	1538/CHENP/2008	28-09-2005	31-08-2006			002850	A 2D/3D switchable display with arbitrary 2D and 3D areas
JP	08-532911	28-09-2005	31-08-2006			002850	A 2D/3D switchable display with arbitrary 2D and 3D areas
US	12/067964	28-09-2005	31-08-2006	2008-0252639 A1		002850	A 2D/3D switchable display with arbitrary 2D and 3D areas
CN	200680036994.6	05-10-2005	25-09-2006	101253406 A		003572	A configurable multi-view 2D/3D switchable display
EP	06809390.5	05-10-2005	25-09-2006	1935187 A		003572	A configurable multi-view 2D/3D switchable display
JP	08-534115	05-10-2005	25-09-2006			003572	A configurable multi-view 2D/3D switchable display
US	12/089399	05-10-2005	25-09-2006	2008-0211977 A1		003572	A configurable multi-view 2D/3D switchable display
CN	200680048559.3	20-12-2005	14-12-2006	101347001 A		003664	Automatic correction for misaligned LCOS 3D displays
EP	06842527.1	20-12-2005	14-12-2006	1967019		003664	Automatic correction for misaligned LCOS 3D displays
IN	3114/CHENP/2008	20-12-2005	14-12-2006			003664	Automatic correction for misaligned LCOS 3D displays
JP	08-546765	20-12-2005	14-12-2006			003664	Automatic correction for misaligned LCOS 3D displays
US	12/158407	20-12-2005	14-12-2006	2009-0002484 A1		003664	Automatic correction for misaligned LCOS 3D displays
CN	200680047032.0	13-12-2005	12-12-2006	101331776 A		003678	Barrier usage in lenticular system design
EP	06842444.9	13-12-2005	12-12-2006	1964415 A		003678	Barrier usage in lenticular system design
JP	08-545219	13-12-2005	12-12-2006			003678	Barrier usage in lenticular system design
US	12/096535	13-12-2005	12-12-2006	2008-0316379 A1		003678	Barrier usage in lenticular system design
CN	200680048665.7	23-12-2005	20-12-2006	101347002A		003734	Multiview 3D television using a set of microbeamers in rear projection
EP	06842627.9	23-12-2005	20-12-2006	1967020 A		003734	Multiview 3D television using a set of microbeamers in rear projection
JP	08-546809	23-12-2005	20-12-2006			003734	Multiview 3D television using a set of microbeamers in rear projection
US	12/158702	23-12-2005	20-12-2006	2008-0204014 A1		003734	Multiview 3D television using a set of microbeamers in rear projection
CN	200680043936.6	23-11-2005	17-11-2006	101313596-A		004239	Motion Based 3D
EP	06821483.2	23-11-2005	17-11-2006	1955553		004239	Motion Based 3D
JP	08-541864	23-11-2005	17-11-2006			004239	Motion Based 3D
US	12/094625	23-11-2005	17-11-2006	2008-0309756 A1		004239	Motion Based 3D
CN	200680047122.XA	14-12-2005	04-12-2006	101331420-A		004329	2D/3D display with two depth modes
EP	06832068.3	14-12-2005	04-12-2006	1963906-A		004329	2D/3D display with two depth modes
JP	08-545161	14-12-2005	04-12-2006			004329	2D/3D display with two depth modes
US	12/097395	14-12-2005	04-12-2006	2008-0316380 A1		004329	2D/3D display with two depth modes
CN	200680048372.5	20-12-2005	22-11-2006	101341433		004353	Improved 2D uniformity of switchable 2D/3D displays
EP	06821528.4	20-12-2005	22-11-2006	1966643		004353	Improved 2D uniformity of switchable 2D/3D displays
JP	2008-546698	20-12-2005	22-11-2006			004353	Improved 2D uniformity of switchable 3D/3D displays
US	12/097771	20-12-2005	22-11-2006	2008-0266472 A1		004353	Improved 2D uniformity of switchable 2D/3D displays
CN	200680048340.5	20-12-2005	28-11-2006	101341762-A		004354	Improved 2D uniformity of switchable 2D/3D displays
EP	06831585.4	20-12-2005	28-11-2006	1969014-A		004354	Improved 2D uniformity of switchable 2D/3D displays
JP	08-546703	20-12-2005	28-11-2006			004354	Improved 2D uniformity of switchable 3D/3D displays
US	12/097776	20-12-2005	28-11-2006	2008-0297594 A1		004354	Improved 2D uniformity of switchable 2D/3D displays
CN	200680047139.0A	14-12-2005	01-12-2006	101331777-A		004358	Optimal driving for locally switchable 2D/3D displays with both electrodes structured
EP	06832091.0	14-12-2005	05-12-2006	1964414-A		004358	Optimal driving for locally switchable 2D/3D displays with both electrodes structured
JP	08-545167	14-12-2005	05-12-2006			004358	Optimal driving for locally switchable 2D/3D displays with both electrodes structured
US	12/097273	14-12-2005	05-12-2006	2009-0040163-A1		004358	Optimal driving for locally switchable 2D/3D displays with both electrodes structured
CN	200680048292.X	20-12-2005	11-12-2006	101444105-A		004361	Adaptive 3D display
EP	06832195.9	20-12-2005	11-12-2006	1967017-A		004361	Adaptive 3D display
JP	08-546714	20-12-2005	11-12-2006			004361	Adaptive 3D display
US	12/097781	20-12-2005	11-12-2006	2008-0284587 A1		004361	Adaptive 3D display
CN	200780009362.5	15-03-2006	14-03-2007	101405767-A		004390	High Quality Depth from Stereo by Multi-Candidate Surface Filtering
EP	07735103.9	15-03-2006	14-03-2007	1997072-A		004390	High Quality Depth from Stereo by Multi-Candidate Surface Filtering
JP	2009-555971	15-03-2006	14-03-2007			004390	High Quality Depth from Stereo by Multi-Candidate Surface Filtering
US	12/282904	15-03-2006	14-03-2007	2009-0080767 A1		004390	High Quality Depth from Stereo by Multi-Candidate Surface Filtering
CN	200680048482.1	20-12-2005	13-12-2006	101341763A		004581	Method to increase the resolution and number of views of multi-view 3D displays
EP	06842489.4	20-12-2005	13-12-2006	1967018-A		004581	Method to increase the resolution and number of views of multi-view 3D displays
JP	08-546748	20-12-2005	13-12-2006			004581	Method to increase the resolution and number of views of multi-view 3D displays
US	12/097775	20-12-2005	13-12-2006	2008-0259233 A1		004581	Method to increase the resolution and number of views of multi-view 3D displays
CN	200780006979.1	27-02-2006	16-02-2007	101390131A		005093	Texture adaptive depth scaling for stereoscopic television
EP	07705506.1	27-02-2006	16-02-2007	1991963-A		005093	Texture adaptive depth scaling for stereoscopic television
IN	4460/CHENP/2008	27-02-2006	16-02-2007			005093	Texture adaptive depth scaling for stereoscopic television
JP	08-555919	27-02-2006	16-02-2007			005093	Texture adaptive depth scaling for stereoscopic television
KR	10-2008-7023542	27-02-2006	16-02-2007			005093	Texture adaptive depth scaling for stereoscopic television
US	12/280377	27-02-2006	16-02-2007	2009-0115750-A1		005093	Texture adaptive depth scaling for stereoscopic television
CN	200780007028.6	28-02-2006	05-02-2007	101395634-A		005210	Directional hole filling algorithm
EP	07705793.3	28-02-2006	05-02-2007	1991958-A		005210	Directional hole filling algorithm
IN	4526/CHENP/2008	28-02-2006	05-02-2007			005210	Directional hole filling algorithm
JP	08-556875	28-02-2006	05-02-2007			005210	Directional hole filling algorithm
US	12/280573	28-02-2006	05-02-2007	2009-0016640 A1		005210	Directional hole filling algorithm
CN	200780006577.1	24-02-2006	20-02-2007	101390405		005229	Reversed mechanics 3D-module
EP	07705916.0	24-02-2006	20-02-2007	1989893-A		005229	Reversed mechanics 3D-module
JP	08-555920	24-02-2006	20-02-2007			005229	Reversed mechanics 3D-module
KR	10-2008-7020615	24-02-2006	20-02-2007			005229	Reversed mechanics 3D-module
TW	096106551	24-02-2006	26-02-2007	200739188-A		005229	Reversed mechanics 3D-module
US	12/279505	24-02-2006	20-02-2007	2009-0009665 A1		005229	Reversed mechanics 3D-module
CN	200780032503.3	04-09-2006	04-09-2007	101512601-A		005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
EP	07826246.2	04-09-2006	04-09-2007	2064675A		005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
IN	1224/CHENP/2009	04-09-2006	04-09-2007			005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
JP	2009-526255	04-09-2006	04-09-2007			005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
KR	10-2009-7006726	04-09-2006	04-09-2007			005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
US	12/439691	04-09-2006	04-09-2007	2009-0324059 A1		005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
CN	200780007667.2	03-03-2006	26-02-2007	101395928A		005279	Switchable 3D display without 2D artefacts
EP	07705945.9	03-03-2006	26-02-2007	1994767-A		005279	Switchable 3D display without 2D artefacts
IN	4649/CHENP/2008	03-03-2006	26-02-2007			005279	Switchable 3D display without 2D artefacts
JP	08-556836	03-03-2006	26-02-2007			005279	Switchable 3D display without 2D artefacts
AU	2008129308	03-03-2006	26-02-2007			005279	Switchable 3D display without 2D artefacts
US	12/281001	03-03-2006	26-02-2007	2009-0033812 A1		005279	Switchable 3D display without 2D artefacts
CN	200780021459.0	09-06-2006	29-05-2007	101467106-A		005440	Using reflective or transmissive LCD to implement amplitude electro-hologram without using an analys
EP	07736637.8	09-06-2006	29-05-2007	2033052-A		005440	Using reflective or transmissive LCD to implement amplitude electro-hologram without using an analys
JP	09-515814	09-06-2006	29-05-2007			005440	Using reflective or transmissive LCD to implement amplitude electro-hologram without using an analys
US	12/303564	09-06-2006	29-05-2007			005440	Using reflective or transmissive LCD to implement amplitude electro-hologram without using an analys

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Country	Application No	Priority Date	Filing Date	Publication No	Grant No	Philips Ref	Title
CN	200780021525.X	[illegible]	[illegible]	[illegible]		005441	Suppression of zeroth order diffraction by appropriate rotation of polarization with transmissive or
EP	07736036.6	[illegible]	[illegible]	[illegible]		005441	Suppression of zeroth order diffraction by appropriate rotation of polarization with transmissive or
JP	09 513515	[illegible]	[illegible]			005441	Suppression of zeroth order diffraction by appropriate rotation of polarization with transmissive or
US	12/303971	[illegible]	[illegible]			005441	Suppression of zeroth order diffraction by appropriate rotation of polarization with transmissive or
CN	200780012472.7	[illegible]	[illegible]	[illegible]		005471	Generic stereoscopic format
EP	07735242.5	[illegible]	[illegible]	[illegible]		[illegible]	Generic stereoscopic format
IN	5240/CHENP/2008	[illegible]	[illegible]			[illegible]	Generic stereoscopic format
JP	09 502293	[illegible]	[illegible]			[illegible]	Generic stereoscopic format
KR	10 2008-7026920	[illegible]	[illegible]			[illegible]	Generic stereoscopic format
RU	2008143205	[illegible]	[illegible]			[illegible]	[illegible]
US	12/294515	[illegible]	[illegible]			[illegible]	[illegible]
CN	200780017005.3	09-05-2006	07-05-2007	101443810-A		005826	[illegible]
EP	07735787.9	09 05 2006	07-05-2007	2018626-A		005826	Image adaptive block erosion
IN	6065/CHENP/2008	09-05-2006	07-05-2007			005826	Image adaptive block erosion
JP	09-508630	09-05-2006	07-05-2007			005826	Image adaptive block erosion
KR	10 2008 7027140	09 05 2006	07-05 2007			005826	Image adaptive block erosion
US	12/299652	09 05 2006	07-05 2007	2009-0179920-A1		005826	Image adaptive block erosion
CN	200780044922.0	04-12 2006	03-12 2007	101589626A		006177	Modifying depth map encoding for a perceptual higher quality
EP	07849316.0	04-12-2006	03-12-2007	2106665-A		006177	Modifying depth map encoding for a perceptual higher quality
IN	3566/CHENP/2009	04 12 2006	03-12-2007			006177	Modifying depth map encoding for a perceptual higher quality
JP	2009-538647	04 12 2006	03 12 2007			006177	Modifying depth map encoding for a perceptual higher quality
US	12/517224	04-12 2006	03-12-2007			006177	Modifying depth map encoding for a perceptual higher quality
CN	200780030765.8	15-08-2006	17-08-2007	101506716-A		006205	Lifetime improvement for vacuum mounted lenticulars using buffers.
EP	07805430.1	15-08-2006	17-08-2007	2057500-A		006205	Lifetime improvement for vacuum mounted lenticulars using buffers.
JP	09-524301	18-08-2006	17-08-2007			006205	Lifetime improvement for vacuum mounted lenticulars using buffers
US	60/822763	18-08-2006	18-08-2006			006205	Lifetime improvement for vacuum mounted lenticulars using buffers
CN	200780030647.7	17-08-2006	14-08-2007	101507258-A		006290	Viewing angle doubling for 3D multi-view displays
EP	07805399.8	17-08-2006	14-08-2007	2055110-A		006290	Viewing angle doubling for 3D multi-view displays
JP	2009-524294	17-08-2006	14-08-2007			006290	Viewing angle doubling for 3D multi-view displays
US	12/377680	17-08-2006	14-08-2007			006290	Viewing angle doubling for 3D multi-view displays
CN	200780031504.8	24-08-2006	11-04-2007	101506729-A		006308	Curvature reduction switchable polymer lenticulars
DE	07735469.4	24-08-2006	11-04-2007		2064590	006308	Curvature reduction switchable polymer lenticulars
FR	07735469.4	24 08-2006	11-04 2007		2064590	006308	Curvature reduction switchable polymer lenticulars
GB	07735469.4	24-08 2006	11-04 2007		2064590	006308	Curvature reduction switchable polymer lenticulars
JP	2009-525130	24-08-2006	11-04-2007			006308	Curvature reduction switchable polymer lenticulars.
KR	10-2009-7003425	24-08-2006	11-04 2007			006308	Curvature reduction switchable polymer lenticulars
TW	096130593	24-08 2006	21-08 2007	200817724-A		006308	Curvature reduction switchable polymer lenticulars
US	12/376575	24-08 2006	11-04 2007			006308	Curvature reduction switchable polymer lenticulars.
CN	200780032421.0	31-08-2006	23-08-2007	101512414-A		006471	Backlight for a lenticular 3D display with improved brightness and contrast
EP	07826108.8	31-08-2006	23-08-2007	2062088-A		006471	Backlight for a lenticular 3D display with improved brightness and contrast
JP	2009-526225	31-08-2006	23-08-2007			006471	Backlight for a lenticular 3D display with improved brightness and contrast
US	12/438737	31-08-2006	23-08-2007	2009-0322862-A1		006471	Backlight for a lenticular 3D display with improved brightness and contrast
CN	200780047085.7	19-12-2006	14-12-2007	101563935-A		006835	Depth estimation from video assisted by audio
EP	07849501.7	19-12-2006	14-12-2007	2092760A		006835	Depth estimation from video assisted by audio
IN	4204/CHENP/2009	19-12 2006	14-12 2007			006835	Depth estimation from video assisted by audio
JP		19 12 2006	14-12 2007			006835	Depth estimation from video assisted by audio
KR	10-2009-7015008	19-12-2006	14-12-2007			006835	Depth estimation from video assisted by audio
RU	2009127757	19-12-2006	14-12-2007			006835	Depth estimation from video assisted by audio
US	12/519378	19-12-2006	14-12 2007			006835	Depth estimation from video assisted by audio
CN	200780037524.6	04 10 2006	02 10 2007	101523434-A		006957	A novel method for depth map post processing for high quality 3D impression
EP	07826616.0	04-10 2006	02-10-2007	2074586 A		006957	A novel method for depth map post processing for high quality 3D impression
IN	2396/CHENP/2009	04-10-2006	02-10-2007			[illegible]	[illegible]
JP	2009 530990	04-10-2006	02-10-2007			[illegible]	A novel method for depth map post processing for high quality 3D impression
KR	10-2009 7008579	04 10 2006	[illegible]			[illegible]	A novel method for depth map post processing for high quality 3D impression
US	12/443728	04-10 2006	02-10-2007	[illegible]		[illegible]	A novel method for depth map post processing for high quality 3D impression
CN	200780043262.4	[illegible]	15-11-2007	[illegible]		[illegible]	Depth from One Image using Visual Saliency
EP	07849156.0	[illegible]	15-11-2007	2087466A		[illegible]	Depth from One Image using Visual Saliency
IN	3525/CHENP/2009	[illegible]	[illegible]			[illegible]	[illegible]
JP	2009-537725	21-11-2006	15-11-2007			[illegible]	Depth from One Image using Visual Saliency
US	12/514464	21-11-2006	15-11-2007			[illegible]	Depth from One Image using Visual Saliency
CN	200780047096.3	19-12-2006	12-12 2007	101563629-A		[illegible]	3D display with diminished blurring
EP	07849438.2	[illegible]	[illegible]	2095158-A		[illegible]	[illegible]
JP	2009-542292	19-12-2006	12-12-2007			[illegible]	3D display with diminished blurring
US	12/519389	19-12-2006	12-12-2007	2010 0027115 A1		[illegible]	3D display with diminished blurring
CN	200780047217.6	19-12-2006	12-12-2007	101563873 A		007233	Low-cost large-screen 3D (home) cinema
EP	07849451.5	19 12 2006	12-12 2007	2095173 A		007233	Low cost large screen 3D (home) cinema
JP	2009 542500	19 12 2006	12 12 2007			007233	Low cost large screen 3D (home) cinema
US	12/519916	19-12-2006	12-12-2007			007233	Low-cost large-screen 3D (home) cinema
CN	200880021844.7	26-06-2007	19-06 2008			007944	Efficient coding of occlusion data
EP	08763383.9	26 06 2007	19-06 2008	2163103A		007944	[illegible]
IN	366/CHENP/2010	26 06 2007	19 06 2008			007944	Efficient coding of occlusion data
JP	not yet known	26-06-2007	19-06-2008			007944	Efficient coding of occlusion data
KR	10-2010-7001680	26-06-2007	19-06-2008			007944	Efficient coding of occlusion data
RU		26 06 2007	19-06 2008			007944	Efficient coding of occlusion data
US	12/665093	26-06-2007	19-06 2008			007944	Efficient coding of occlusion data
CN	200880023190.1	03-07-2007	24-06-2008			008006	Motion Assisted Gravity
EP	08776456.8	03-07-2007	24-06-2008			008006	Motion Assisted Gravity
IN	555/CHENP/2010	03 07-2007	24-06-2008			008006	Motion Assisted Gravity
JP	not yet known	03-07-2007	24-06-2008			008006	Motion Assisted Gravity
US	12/667241	03-07-2007	24-06-2008			008006	Motion Assisted Gravity
AU		24-09-2007	16-09-2008			[illegible]	2D compatibility using compressed stereo video formats
BR		24 09 2007	16 09 2008			[illegible]	2D compatibility using compressed stereo video formats
CA		24 09 2007	16 09 2008			[illegible]	2D compatibility using compressed stereo video formats
CN		24-09 2007	16-09 2008			[illegible]	2D compatibility using compressed stereo video formats
EG		24-09-2007	16-09-2008			[illegible]	2D compatibility using compressed stereo video formats
EP	08807663.2	24 09 2007	16-09 2008			[illegible]	2D compatibility using compressed stereo video formats
ID		24 09 2007	16 09 2008			[illegible]	2D compatibility using compressed stereo video formats
IN		24-09 2007	16 09 2008			[illegible]	2D compatibility using compressed stereo video formats
JP		24-09-2007	16-09-2008			008351	2D compatibility using compressed stereo video formats
KR		24-09-2007	16-09-2008			008351	2D compatibility using compressed stereo video formats
MX		24-09 2007	16-09 2008			008351	2D compatibility using compressed stereo video formats
MY		24-09 2007	16-09-2008			008351	2D compatibility using compressed stereo video formats
RU		24-09-2007	16-09-2008			008351	2D compatibility using compressed stereo video formats
US		24-09-2007				008351	2D compatibility using compressed stereo video formats
US	12/526665	24 09 2007	16-09 2008			008351	2D compatibility using compressed stereo video formats
ZA		24-09-2007	16-09-2008			008351	2D compatibility using compressed stereo video formats
CN	200880012592.1	17-04-2007	14-04 2008			008450	Improved GRIN lens design for 2D/3D switchable displays
EP	08737826.1	17 04-2007	14-04 2008	2140304 A		008450	Improved GRIN-lens design for 2D/3D switchable displays
IN	6603/CHENP/2009	17 04 2007	14-04 2008			008450	Improved GRIN-lens design for 2D/3D switchable displays
JP	2010 503637	17 04 2007	14 04 2008			008450	Improved GRIN-lens design for 2D/3D switchable displays
KR	10-2009-7023830	17-04-2007	14-04-2008			008450	Improved GRIN lens design for 2D/3D switchable displays
TW	097113677	17 04-2007	15-04-2008	200900527 A		008450	Improved GRIN lens design for 2D/3D switchable displays
US	12/595250	17 04 2007	14 04 2008			008450	Improved GRIN-lens design for 2D/3D switchable displays
CN	200880015625.8	11 05 2007	05 05 2008			008487	Automatic disparity to depth conversion
EP	08738076.2	11-05-2007	05-05-2008	2153669		008487	Automatic disparity to depth conversion
IN	7129/CHENP/2009	11-05-2007	05-05-2008			008487	Automatic disparity to depth conversion
JP	not yet known	11-05-2007	05-05 2008			008487	Automatic disparity to depth conversion
KR	10-2009-7025762	11 05 2007	05 05 2008			008487	Automatic disparity to depth conversion
US	12/599362	11-05-2007	05-05-2008			008487	Automatic disparity to depth conversion

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WO	IB2008/054420	02-11-2007	27-10-2008	2009/057030 A1		008696	Method for increasing resolution and viewing angle of multi-view display
TW	097137515	02-10-2007	30-09-2008	200923422A		008697	Optimal pixel distribution for 3D displays with view doubling
WO	IB2008/053971	02-10-2007	30-09-2008	2009/044334 A1		008697	Optimal pixel distribution for 3D displays with view doubling
TW	098103729	08-02-2008	05-02-2009	200938876-A		008794	Application- and/or content-dependent adaptation of the lens strength in lenticular based 3D display
WO	IB2009/050395	08-02-2008	02-02-2009			008794	Application- and/or content-dependent adaptation of the lens strength in lenticular based 3D display
CN	unknown	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
EP	08789359.0	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
IN	923/CHENP/2010	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
JP	not yet known	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
KR		26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
US	12/669828	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
WO	IB2008/054027	11-10-2007	02-10-2008	2009/047681-A1		009182	[illegible]
TW	098104096	11-02-2008	09-02-2009	200952463-A		009445	A 3D landscape/portrait display
WO	IB2009/050491	11-02-2008	06-02-2009			009445	A 3D landscape/portrait display
TW	097149181	20-12-2007	17-12-2008	200935872-A		009431	Depth editor with interactive segment merging
WO	IB2008/055286	20-12-2007	15-12-2008			009431	Depth editor with interactive segment merging
WO	IB2009/052765	27-06-2008	26-06-2009			009845	Improved 3D display design using lenticulars combined with a diffuser layer or a micro lens array
TW	098102271	24-01-2008	21-01-2009	200945043A		009878	Colour blending for calculating the hidden texture layer in a layered 3D video format
WO	IB2009/050222	24-01-2008	21-01-2009			009878	Colour blending for calculating the hidden texture layer in a layered 3D video format
TW	098118979	02-06-2008	01-06-2009	201004313-A		009896	Depth map coding of side or occluded areas [Drape]
WO	IB2009/052259	02-06-2008	27-05-2009			009896	Depth map coding of side or occluded areas [Drape]
TW	098118246	02-06-2008	02-06-2009	201003121A		010417	A 3D Display with a low-dn lens array (revisited)
WO	IB2009/052231	02-06-2008	27-05-2009			010417	A 3D Display with a low-dn lens array (revisited)
TW	098128415	26-08-2008	24-08-2009			010591	A flexible format for multi-type multilayer 3D content storage and display
WO	IB2009/053608	26-08-2008	17-08-2009			010591	A flexible format for multi-type multilayer 3D content storage and display
WO	IB2009/053167	28-07-2008	22-07-2009			010592	Use of inpainting techniques for image and dept correction
TW	098143947	22-12-2008	21-12-2009			010803	Multi-view 3D display with reduced banding
WO	IB2009/055789	22-12-2008	16-12-2009			010803	Multi-view 3D display with reduced banding
WO	IB2009/053838	11-09-2008	04-09-2009			010931	Adaptive Weighed Mixing Adjustment for Bilateral Filter
TW	098134162	10-10-2008	08-10-2009			011000	Parallax Transform Interpolation
WO	IB2009/054302	10-10-2008	01-10-2009			011000	Parallax Transform Interpolation
TW	098132351	25-09-2008	24-09-2009			011050	Depth signal improvement in the presence of alpha
WO	IB2009/054160	25-09-2008	23-09-2009			011050	Depth signal improvement in the presence of alpha
TW	098137138	04-11-2008	02-11-2009			011037	Metadata for Occlusion Layers
WO	IB2009/054869	04-11-2008	03-11-2009			011037	Metadata for Occlusion Layers
TW	098131956	25-09-2008	22-09-2009			011038	Specifying dependence between layers in multi-layer 3D representations
WO	IB2009/054063	25-09-2008	18-09-2009			011038	Specifying dependence between layers in multi-layer 3D representations
TW	098136208	28-10-2008	26-10-2009			011690	Soft 2D-3D switching of 3D displays based on user attention
WO	IB2009/054713	28-10-2008	26-10-2009			011690	Soft 2D-3D switching of 3D displays based on user attention
TW	098136206	28-10-2008	26-10-2009			011691	System and apparatus for automated generation of WOWvx Declipse content in 3D content creation tools
WO	IB2009/054658	28-10-2008	21-10-2009			011691	System and apparatus for automated generation of WOWvx Declipse content in 3D content creation tools
WO	IB2009/055727	19-12-2008	14-12-2009			011820	Automatic depth estimation for soccer video
TW	098135302	21-10-2008	19-10-2009			012017	Protection of 3D content in the Declipse 2 format against compression and resizing
WO	IB2009/054543	21-10-2008	15-10-2009			012017	Protection of 3D content in the Declipse 2 format against compression and resizing
EP	08170482.7	02-12-2008	02-12-2008			012030	Question interface for 3D picture creation
TW	098140846	02-12-2008	30-11-2009			012030	Question interface for 3D picture creation
WO	IB2009/055363	02-12-2008	26-11-2009			012030	Question interface for 3D picture creation
EP	08171081.1	09-12-2008	09-12-2008			012036	A hybrid interface for interactive image segmentation
TW	098142117	09-12-2008	09-12-2009			012036	A hybrid interface for interactive image segmentation
WO	IB2009/055468	09-12-2008	03-12-2009			012036	A hybrid interface for interactive image segmentation
TW	098142915	18-12-2008	15-12-2009			012035	Ideal panel and lenticular configurations for autostereoscopic 3D displays
WO	IB2009/055705	18-12-2008	11-12-2009			012035	Ideal panel and lenticular configurations for autostereoscopic 3D displays
EP	08168246.4	04-11-2008	04-11-2008			012091	Liveliness control for 2D to 3D conversion
TW	098137434	04-11-2008	04-11-2009			012091	Liveliness control for 2D to 3D conversion
WO	IB2009/054357	04-11-2008	02-11-2009			012091	Liveliness control for 2D to 3D conversion
EP	08171627.6	15-12-2008	15-12-2008			012131	Image-based 3D video format
WO	IB2009/055635	15-12-2008	10-12-2009			012131	Image-based 3D video format
EP	09155332.1	17-03-2009	17-03-2009			012332	A Colour Sequential display
TW		17-03-2009				012332	A Colour Sequential display
WO		17-03-2009				012332	A Colour Sequential display
EP	09161377.8	28-05-2009	28-05-2009			012922	A Blue Phase Switchable 3D Lenticular
TW		28-05-2009				012922	A Blue Phase Switchable 3D Lenticular
WO		28-05-2009				012922	A Blue Phase Switchable 3D Lenticular
EP	09156092.0	25-03-2009	25-03-2009			012924	R2R switchable cell making
EP	09156465.8	25-03-2009	27-03-2009			012924	R2R switchable cell making
WO		25-03-2009				012924	R2R switchable cell making
EP	09161330.7	28-05-2009	28-05-2009			013213	Single-cone auto-stereoscopic 3D display
EP	09163575.9	28-05-2009	26-06-2009			013213	Single-cone auto-stereoscopic 3D display
EP		28-05-2009	26-06-2009			013213	Single-cone auto-stereoscopic 3D display
TW		28-05-2009				013213	Single-cone auto-stereoscopic 3D display
WO		28-05-2009				013213	Single-cone auto-stereoscopic 3D display
EP	09174982.2	03-11-2009	03-11-2009			013358	Time sequential subsubpixel driving of LCD's for improved resolution 3D
TW		03-11-2009				013358	Time sequential subsubpixel driving of LCD's for improved resolution 3D
WO		03-11-2009				013358	Time sequential subsubpixel driving of LCD's for improved resolution 3D
EP	09161339.8	28-05-2009	28-05-2009			013359	Ultra high angle (3D) LCD
TW		28-05-2009				013359	Ultra high angle (3D) LCD
WO		28-05-2009				013359	Ultra high angle (3D) LCD
EP	09163572.6	26-06-2009	26-06-2009			013360	Improved 3D performance by time-sequential operation
TW		26-06-2009				013360	Improved 3D performance by time-sequential operation
WO		26-06-2009				013360	Improved 3D performance by time-sequential operation
EP	09163366.8	26-06-2009	26-06-2009			013361	Improved 2D mode of 2D/3D switchable TV
WO		26-06-2009				013361	Improved 2D mode of 2D/3D switchable TV
EP	09174850.5	03-11-2009	03-11-2009			013831	Capping layer on electrodes of (multi-electrode) gradient index lens
TW		03-11-2009				013831	Capping layer on electrodes of (multi-electrode) gradient index lens
WO		03-11-2009				013831	Capping layer on electrodes of (multi-electrode) gradient-index lens
EP	09175915.4	13-11-2009	13-11-2009			014160	Efficient alpha map coding in 3D/stereoscopic video enabling improved fore/background transitions
TW		13-11-2009				014160	Efficient alpha map coding in 3D/stereoscopic video enabling improved fore/background transitions
WO		13-11-2009				014160	Efficient alpha map coding in 3D/stereoscopic video enabling improved fore/background transitions
EP	09172096.1	02-10-2009	02-10-2009			014152	Encoding preferred rendering direction in video signal
WO		02-10-2009				014152	Encoding preferred rendering direction in video signal

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EP	09758901.5	13-11-2009	13-11-2009			014307	Rendering of 2D-plus-Depth content with asymmetric resolution of centre view and parallax mac
WO		13-11-2009				014307	Rendering of 2D-plus-Depth content with asymmetric resolution of centre view and parallax mac
CN	99801455.9	30-06-1998	14-06-1999	1277695-A	99801455.9	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo intersection filter
DE	99922456.7	30-06-1998	14-06-1999	1038271-A1	69912576.6	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo intersection filter
FR	99922456.7	30-06-1998	14-06-1999	1038271-A1	1038271	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo intersection filter
GB	99922458.7	30-06-1998	14-06-1999	1038271-A1	1038271	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo intersection filter
JP	00-557414	30-06-1998	14-06-1999	02-519792	4564436	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo intersection filter
KR	10-2000-7001924	30-06-1998	14-06-1999	10-2001-0023290	10-0637612	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo intersection filter
TW	088101981	30-06-1998	03-02-2000		169772	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo intersection filter
US	09/107915	30-06-1998	16-06-1999		6496183	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo intersection filter
DE	94201977.9	15-07-1993	05-07-1994	0634733-A3	69421967.3	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
FR	94201977.9	15-07-1993	08-07-1994	0634733-A3	0634733	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
GB	94201977.9	15-07-1993	08-07-1994	0634733-A3	0634733	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
JP	94-161066	15-07-1993	13-07-1994	95-75264	3645922	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
KR	10-1994-0017045	15-07-1993	25-07-1994	95-0004045	0329874	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
US	08/755195	15-07-1993	04-02-1997		5754064	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
DE	96914378.3	05-07-1995	12-06-1996	0783825-A1	69616005.4	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
FR	96914378.3	05-07-1995	12-06-1996	0783825-A1	0783825	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
GB	96914378.3	05-07-1995	12-06-1996	0783825-A1	0783825	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
JP	97-504938	05-07-1995	12-06-1996	98-505689	4010564	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
KR	97-701421	05-07-1995	12-06-1996	97-0705907	0418146	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
US	08/670377	05-07-1995	25-06-1996		6118584	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
DE	97921983.5	07-06-1996	29-05-1997	0843940-A1	69714551.4	B 034082	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
FR	97921983.5	07-06-1996	29-05-1997	0843940-A1	0843940	B 034082	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
GB	97921983.5	07-06-1996	29-05-1997	0843940-A1	0843940	B 034082	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
JP	98-500368	07-06-1996	29-05-1997	99-511316	4047287	B 034082	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
US	08/869812	07-06-1996	05-06-1997		6023263	B 034082	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
DE	97924185.6	21-06-1996	12-06-1997	0846308-A1	69715138.7	B 034084	IMAGE DEPTH DATA COMPRESSION
FR	97924185.8	21-06-1996	12-06-1997	0846308-A1	0846308	B 034084	IMAGE DEPTH DATA COMPRESSION
GB	97924185.8	21-06-1996	12-06-1997	0846308-A1	0846308	B 034084	IMAGE DEPTH DATA COMPRESSION
JP	98-502556	21-06-1996	12-06-1997	99-511884	3952935	B 034084	IMAGE DEPTH DATA COMPRESSION
KR	98-701275	21-06-1996	12-06-1997	10-1999-0044043	0435609	B 034084	IMAGE DEPTH DATA COMPRESSION
US	08/880038	21-06-1996	20-06-1997		6104837	B 034084	IMAGE DEPTH DATA COMPRESSION
DE	97200399.0	23-02-1996	13-02-1997	0791847-A1	69715534.6	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
FR	97200399.0	23-02-1996	13-02-1997	0791847-A1	0791847	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
GB	97200399.0	23-02-1996	13-02-1997	0791847-A1	0791847	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
JP	97-38696	23-02-1996	24-02-1997	97-215777	3940456	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
JP	07-034284	23-02-1996	24-02-1997	07-155097	4253345	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
JP	08-268132	23-02-1996	24-02-1997			B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
KR	97-6580	23-02-1996	24-02-1997		0429091	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
US	08/798670	23-02-1996	12-02-1997		6064424	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
DE	97942159.1	14-11-1996	13-10-1997	0877966-A1	69728647.9	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
FR	97942159.1	14-11-1996	13-10-1997	0877966-A1	0877966	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
GB	97942159.1	14-11-1996	13-10-1997	0877966-A1	0877966	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
NL	97942159.1	14-11-1996	13-10-1997	0877966-A1	0877966	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
US	08/964103	14-11-1996	06-11-1997		6069650	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
EP	98928497.1	23-07-1997	09-07-1998	0934546-A1		B 034172	3D-LCD LENTICULAR ADAPTOR
JP	99-509574	23-07-1997	09-07-1998	01-501079	4211220	B 034172	3D-LCD LENTICULAR ADAPTOR
KR	10-1999-7002258	23-07-1997	09-07-1998	10-2000-0068525	1548862	B 034172	3D-LCD LENTICULAR ADAPTOR
US	09/119891	23-07-1997	21-07-1998		6801243	B 034172	3D-LCD LENTICULAR ADAPTOR
CN	03818215.7	31-07-2002	09-07-2003	1672432		FR020079	DISPARITY CODING SYNTAX
EP	03740961.2	31-07-2002	09-07-2003	1527613-A		FR020079	DISPARITY CODING SYNTAX
JP	04-525649	31-07-2002	09-07-2003	05-533121		FR020079	DISPARITY CODING SYNTAX
KR	10-2005-7001747	31-07-2002	09-07-2003			FR020079	DISPARITY CODING SYNTAX
US	10/522464	31-07-2002	09-07-2003	2006-0023950-A1		FR020079	DISPARITY CODING SYNTAX
CN	200380101874.6	23-10-2002	01-10-2003	1706203	200380101874.6	FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
EP	03809395.1	23-10-2002	01-10-2003	1574079-A		FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
JP	04-546237	23-10-2002	01-10-2003	06-513596		FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
KR	10-2005-7006375	23-10-2002	01-10-2003			FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
US	10/531935	23-10-2002	01-10-2003	2006-0082575-A1	7224355	FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
US	09/838852	03-05-2000	20-04-2001	2001-0043651-A1	6833548	GB000051	OPTIMISATION OF THE 3D GRAPHICS PIPELINE AS APPLIED TO RENDI
CN	200480022178.0	31-07-2003	22-07-2004	1830218-A		GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
EP	04744227.2	31-07-2003	22-07-2004	1652388-A		GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
JP	2006-521707	31-07-2003	22-07-2004			GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
KR	10-2006-7001943	31-07-2003	22-07-2004			GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
US	10/566346	31-07-2003	22-07-2004	2006-0157178-A1	7619604	GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
CN	200480027121.X	20-09-2003	09-09-2004	1853410A		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
EP	04769970.7	20-09-2003	09-09-2004	1668920-A1		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
JP	06-526771	20-09-2003	09-09-2004	07-506132		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
KR	10-2006-7005353	20-09-2003	09-09-2004			GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
TW	093126266	20-09-2003	17-09-2004	200526755		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
US	10/571823	20-09-2003	09-09-2004	2006-0279680-A1		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
CN	200480027946.1	27-09-2003	23-09-2004	1856720-A	200480027946.1	GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
EP	04770067.9	27-09-2003	23-09-2004	1709467-A		GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
JP	2006-527552	27-09-2003	23-09-2004			GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
KR	10-2006-7005655	27-09-2003	23-09-2004			GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
TW	093128068	27-09-2003	24-09-2004	200523504		GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
US	10/573034	27-09-2003	23-09-2004	2007-0109811-A1		GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
CN	200480028926.6	04-10-2003	30-09-2004	1864414-A		GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
EP	04770113.9	04-10-2003	30-09-2004	1673947-A		GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
JP	06-530952	04-10-2003	30-09-2004			GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
KR	2006-7006448	04-10-2003	30-09-2004			GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
TW	093129897	04-10-2003	01-10-2004	200519331		GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
US	10/574141	04-10-2003	30-09-2004	2007-0052695-A1		GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
CN	200480028923.2	04-10-2003	30-09-2004	1864413-A		GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
EP	04770135.4	04-10-2003	30-09-2004	1673943-A		GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
JP	06-530956	04-10-2003	30-09-2004			GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
KR	2006-7006451	04-10-2003	30-09-2004			GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
TW	093129894	04-10-2003	01-10-2004	200525492		GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
US	10/574142	04-10-2003	30-09-2004	2006-0279547-A1		GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
CN	200480028891.6	04-10-2003	30-09-2004	1864059-A		GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
DE	04770136.2	04-10-2003	30-09-2004		602004012129.0	GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
FR	04770136.2	04-10-2003	30-09-2004		1673652	GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
GB	04770136.2	04-10-2003	30-09-2004		1673652	GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
JP	06-530955	04-10-2003	30-09-2004			GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
KR	2006-7006463	04-10-2003	30-09-2004			GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
US	10/574140	04-10-2003	30-09-2004	2007-0040778-A1		GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
CN	200480032496.5	07-11-2003	03-11-2004	1875302-A	200480032496.5	GB030200	SWITCHABLE BACKLIGHT FOR 2D/3D DISPLAY
EP	04799054.4	07-11-2003	03-11-2004	1685722-A		GB030200	SWITCHABLE BACKLIGHT FOR 2D/3D DISPLAY
JP	06-537544	07-11-2003	03-11-2004			GB030200	SWITCHABLE BACKLIGHT FOR 2D/3D DISPLAY
US	10/578071	07-11-2003	03-11-2004	2007-0091638-A1	7626643	GB030200	SWITCHABLE BACKLIGHT FOR 2D/3D DISPLAY
CN	200480035751.X	03-12-2003	02-12-2004	1890988-A		GB030215	2D/3D DISPLAYS
EP	04801437.6	03-12-2003	02-12-2004	1692871-A		GB030215	2D/3D DISPLAYS
JP	06-541104	03-12-2003	02-12-2004			GB030215	2D/3D DISPLAYS
KR	10-2006-7010581	03-12-2003	02-12-2004			GB030215	2D/3D DISPLAYS
US	10/581215	03-12-2003	02-12-2004	2008-0278640-A1		GB030215	2D/3D DISPLAYS

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CN	200580002169.X	09-01-2004	06-01-2005	1910938-A		GB040009	OPTICAL PATH LENGTH ADJUSTER BASED ON BIREFRINGENT MATERIALS
EP	05702595.1	09-01-2004	06-01-2005	1707015-A		GB040009	OPTICAL PATH LENGTH ADJUSTER BASED ON BIREFRINGENT MATERIALS
JP	06-548603	09-01-2004	06-01-2005			GB040009	OPTICAL PATH LENGTH ADJUSTER BASED ON BIREFRINGENT MATERIALS
US	10/596577	09-01-2004	06-01-2005	2007-0153284-A1		GB040009	OPTICAL PATH LENGTH ADJUSTER BASED ON BIREFRINGENT MATERIALS
CN	200580002093.2	09-01-2004	06-01-2005	1910499-A		GB040011	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETRIC DISPLAY
DE	05702604.9	09-01-2004	06-01-2005		602005006097.9	GB040011	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETRIC DISPLAY
FR	05702604.9	09-01-2004	06-01-2005		1706778	GB040011	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETRIC DISPLAY
GB	05702604.9	09-01-2004	06-01-2005		1706778	GB040011	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETRIC DISPLAY
JP	06-548527	09-01-2004	06-01-2005			GB040011	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETRIC DISPLAY
US	10/596882	09-01-2004	06-01-2005	2009-0021824-A1		GB040011	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETRIC DISPLAY
CN	200580002164.7	09-01-2004	06-01-2005	1910936-A		GB040012	A THREE-DIMENSIONAL DISPLAY
EP	05702606.4	09-01-2004	06-01-2005	1707014-A		GB040012	A THREE-DIMENSIONAL DISPLAY
US	10/596854	09-01-2004	06-01-2005	2007-0146358-A1		GB040012	A THREE-DIMENSIONAL DISPLAY
CN	200580005469.3	21-02-2004	17-02-2005	1922893-A		GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
EP	05703000.5	21-02-2004	17-02-2005	1716708-A		GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
JP	06-553753	21-02-2004	17-02-2005			GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
KR	10-2006-7016525	21-02-2004	17-02-2005			GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
TW	094104886	21-02-2004	18-02-2005	200540731-A		GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
US	10/598015	21-02-2004	17-02-2005	2008-0150936-A1		GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
CN	200580005504.6	21-02-2004	17-02-2005	1922580-A		GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
DE	05702995.1	21-02-2004	17-02-2005		602005004895.2	GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
FR	05702995.1	21-02-2004	17-02-2005		1716446	GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
GB	05702995.1	21-02-2004	17-02-2005		1716446	GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
JP	06-553750	21-02-2004	17-02-2005			GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
US	10/598015	21-02-2004	17-02-2005	2007-0159760-A1		GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
CN	200680008360.X	17-03-2005	14-03-2006	101142823A	200680008360.X	GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
EP	06711095.7	17-03-2005	14-03-2006	1862016-A		GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
JP	08-501476	17-03-2005	14-03-2006			GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
KR	10-2007-7020901	17-03-2005	14-03-2006			GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
TW	095108593	17-03-2005	14-03-2006	200704135		GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
US	11/909410	17-03-2005	14-03-2006	2008-0191966-A1		GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
CN	95191063.9	09-09-1994	01-09-1995	1137247-A	95191063.9	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
DE	95928598.2	09-09-1994	01-09-1995	0734314-A1	69529334.6	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
FR	95928598.2	09-09-1994	01-09-1995	0734314-A1	0734314	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
GB	95928598.2	09-09-1994	01-09-1995	0734314-A1	0734314	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
JP	96-509552	09-09-1994	01-09-1995	97-505534	3816320	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
KR	96-702394	09-09-1994	01-09-1995	96-0705666	407874	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
US	08/525045	09-09-1994	08-09-1995		7125505	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
US	11/459710	09-09-1994	08-09-1995	2006-0254318-A1		N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
DE	96939270.3	19-12-1995	09-12-1996	0809913-A1	69621778.3	N 015875	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
FR	96939270.3	19-12-1995	09-12-1996	0809913-A1	0809913	N 015875	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
GB	96939270.3	19-12-1995	09-12-1996	0809913-A1	0809913	N 015875	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
JP	97-522624	19-12-1995	09-12-1996	99-501188	4392060	N 015875	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
KR	97-705714	19-12-1995	09-12-1996	10-1998-0702317	0445209	N 015875	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
US	08/765484	19-12-1995	16-12-1996		5929859	N 015875	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
DE	97943112.9	21-11-1996	20-10-1997	0877991-A1	69718291.6	N 016076	MULTI-LAYER TEXTURE MAPS
FR	97943112.9	21-11-1996	20-10-1997	0877991-A1	0877991	N 016076	MULTI-LAYER TEXTURE MAPS
GB	97943112.9	21-11-1996	20-10-1997	0877991-A1	0877991	N 016076	MULTI-LAYER TEXTURE MAPS
JP	98-523534	21-11-1996	20-10-1997	00-504453	4071290	N 016076	MULTI-LAYER TEXTURE MAPS
US	08/972977	21-11-1996	19-11-1997		6049337	N 016076	MULTI-LAYER TEXTURE MAPS
CN	99800574.5	01-04-1998	22-03-1999	1273001-A	99800574.5	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
DE	99942625.7	01-04-1998	22-03-1999		69936029.3	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
FR	99942625.7	01-04-1998	22-03-1999		0986906	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
GB	99942625.7	01-04-1998	22-03-1999		0986906	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
JP	99-549099	01-04-1998	22-03-1999	02-502146	4236705	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
KR	10-1999-7011234	01-04-1998	22-03-1999	10-2001-0013243	10-0632195	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
US	09/281551	01-04-1998	30-03-1999		6442303	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
EP	00907672.0	31-03-1999	09-03-2000	1082702-A1		N 017367	DISPARITY MEASUREMENT VERIFICATION
JP	00-609962	31-03-1999	09-03-2000	02-541568		N 017367	DISPARITY MEASUREMENT VERIFICATION
US	09/534209	31-03-1999	24-03-2000		6625304	N 017367	DISPARITY MEASUREMENT VERIFICATION
CN	[illegible]	19-05-2000	26-04-2001	1381144-A	01801321.X	NL000276	DEPTH ESTIMATION WITH OCCLUSION
DE	[illegible]	19-05-2000	26-04-2001		60121443.9	NL000276	DEPTH ESTIMATION WITH OCCLUSION
FR	[illegible]	19-05-2000	26-04-2001		1290895	NL000276	DEPTH ESTIMATION WITH OCCLUSION
GB	01931656.1	19-05-2000	26-04-2001		1290895	NL000276	DEPTH ESTIMATION WITH OCCLUSION
JP	01-586926	19-05-2000	26-04-2001			NL000276	DEPTH ESTIMATION WITH OCCLUSION
KR	10-2002-7000724	19-05-2000	26-04-2001		10-0806595	NL000276	DEPTH ESTIMATION WITH OCCLUSION
US	09/856349	19-05-2000	07-05-2001	2002-0009211-A1	6955604	NL000276	DEPTH ESTIMATION WITH OCCLUSION
CN	[illegible]	07-09-2000	27-08-2001	1547725-A	01802642.7	NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
EP	[illegible]	07-09-2000	27-08-2001	1374174-A		NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
JP	02-525573	07-09-2000	27-08-2001	04-505659		NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
KR	[illegible]	07-09-2000	[illegible]	[illegible]	10-843112	NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
US	09/945954	07-09-2000	04-09-2001	2002-0064310-A1	7046850	NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
CN	02801721.8	17-05-2001	16-05-2002	1465123-A	02801721.8	NL010309	SEGMENTATION BASED ON MOTION VECTORS
EP	[illegible]	17-05-2001	16-05-2002	1402477-A		NL010309	SEGMENTATION BASED ON MOTION VECTORS
KR	[illegible]	17-05-2001	16-05-2002			NL010309	SEGMENTATION BASED ON MOTION VECTORS
US	[illegible]	17-05-2001	14-05-2002	2003-0035583-A1	7120277	NL010309	SEGMENTATION BASED ON MOTION VECTORS
CN	[illegible]	29-05-2001	28-05-2002	1511419-A	02801905.3	NL010352	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
EP	[illegible]	29-05-2001	28-05-2002	1407612-A		NL010352	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
JP	[illegible]	29-05-2001	28-05-2002	04-530318	4173440	NL010352	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
KR	[illegible]	29-05-2001	28-05-2002			NL010352	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
US	[illegible]	29-05-2001	28-05-2002		7439976	NL010352	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
CN	[illegible]	23-07-2001	[illegible]	[illegible]	100366096	NL010496	SIMULTANEOUSLY 3D AND 2D
DE	[illegible]	23-07-2001	[illegible]		60234187.6	NL010496	SIMULTANEOUSLY 3D AND 2D
ES	02743471.1	23-07-2001	[illegible]		1413148	NL010496	SIMULTANEOUSLY 3D AND 2D
FR	02743471.1	23-07-2001	[illegible]		[illegible]	NL010496	SIMULTANEOUSLY 3D AND 2D
GB	02743471.1	23-07-2001	[illegible]		[illegible]	NL010496	SIMULTANEOUSLY 3D AND 2D
IT	02743471.1	23-07-2001	[illegible]		[illegible]	[illegible]	SIMULTANEOUSLY 3D AND 2D
JP	03-516226	23-07-2001	[illegible]	[illegible]	[illegible]	[illegible]	SIMULTANEOUSLY 3D AND 2D
KR	10-2004-7000347	23-07-2001	[illegible]			[illegible]	SIMULTANEOUSLY 3D AND 2D
US	10/193497	23-07-2001	[illegible]	[illegible]	[illegible]	[illegible]	SIMULTANEOUSLY 3D AND 2D
VN	1-2003-00278	23-07-2001	[illegible]		[illegible]	[illegible]	SIMULTANEOUSLY 3D AND 2D
CN	02815578.4	15-08-2001	[illegible]	[illegible]	[illegible]	[illegible]	DEPTH MAP FOR EYE TRACKING IN VIDEO-CONFERENCING
EP	02751481.5	15-08-2001	[illegible]	[illegible]		[illegible]	DEPTH MAP FOR EYE TRACKING IN VIDEO CONFERENCING
JP	03-521629	15-08-2001	[illegible]	[illegible]	[illegible]	[illegible]	DEPTH MAP FOR EYE TRACKING IN VIDEO CONFERENCING
US	[illegible]	15-08-2001	[illegible]	[illegible]		[illegible]	DEPTH MAP FOR EYE TRACKING IN VIDEO CONFERENCING
CN	[illegible]	21-09-2001	[illegible]	[illegible]	[illegible]	[illegible]	AUTOSTEREOSCOPIC DISPLAY SYSTEM WITH TWO GRIDS OF LENSES
EP	[illegible]	21-09-2001	[illegible]	[illegible]		[illegible]	AUTOSTEREOSCOPIC DISPLAY SYSTEM WITH TWO GRIDS OF LENSES
JP	03-524273	21-09-2001	[illegible]	[illegible]	[illegible]	[illegible]	AUTOSTEREOSCOPIC DISPLAY SYSTEM WITH TWO GRIDS OF LENSES
US	10/252220	21-09-2001	[illegible]	[illegible]	[illegible]	[illegible]	AUTOSTEREOSCOPIC DISPLAY SYSTEM WITH TWO GRIDS OF LENSES

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EP	02765271.8	11-10-2001	18-09-2002	1438865-A		NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
JP	03-537938	11-10-2001	18-09-2002	05-506776	4145794	NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
KR	10-2004-7005282	11-10-2001	18-09-2002			NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
TW	091215094	11-10-2001	24-09-2002		[illegible] 224518	NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
US	10/267083	11-10-2001	08-10-2002	2003-0085850 A1	7157344	NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
CN	02826521.9	07-01-2002	09-12-2002	1613093-A	02826522.9	NL020004	DEPTH SCALING
EP	02735855.4	07-01-2002	09-12-2002	1466301-A		NL020004	DEPTH SCALING
JP	2003-558794	07-01-2002	09-12-2002		4322121	NL020004	DEPTH SCALING
KR	10-2004-7010567	07-01-2002	09-12-2002			NL020004	DEPTH SCALING
US	10/500550	07-01-2002	09-12-2002	2005-0093892-A1	7167188	NL020004	DEPTH SCALING
CN	03803327.5	06-02-2002	23-01-2003	1628313-A	03803327.5	NL020105	TIME CONSISTENCY AND ACCURACY OF SEGMENTATION
US	10/503424	06-02-2002	23-01-2003	2005-0129312-A1		NL020105	TIME CONSISTENCY AND ACCURACY OF SEGMENTATION
CN	03804233.9	20-02-2002	06-02-2003	1751259-A	03804233.9	NL020131	3D/2D DISPLAY WITH FLUID LENS PARTS
EP	03700453.8	20-02-2002	06-02-2003	1478964-A		NL020131	3D/2D DISPLAY WITH FLUID LENS PARTS
JP	03-570171	20-02-2002	06-02-2003	05-517991		NL020131	3D/2D DISPLAY WITH FLUID LENS PARTS
KR	10-2004-7012873	20-02-2002	06-02-2003			NL020131	3D/2D DISPLAY WITH FLUID LENS PARTS
US	10/505490	20-02-2002	06-02-2003	2005-0253779-A1	7307672	NL020131	3D/2D DISPLAY WITH FLUID LENS PARTS
CN	03816165.6	08-07-2002	18-06-2003	1666142-A	03816165.6	NL020620	REFLECTIVE 3D DISPLAY
EP	03762529.4	08-07-2002	18-06-2003	1525510-A		NL020620	REFLECTIVE 3D DISPLAY
JP	04-519042	08-07-2002	18-06-2003			NL020620	REFLECTIVE 3D DISPLAY
KR	10-2005-7000370	08-07-2002	18-06-2003			NL020620	REFLECTIVE 3D DISPLAY
US	10/520239	08-07-2002	18-06-2003	2005-0254113 A1	7394506	NL020620	REFLECTIVE 3D DISPLAY
CN	0380102636.6	01-11-2002	08-10-2003	1708996		NL021087	3D DISPLAY WITH INTEGRATED RENDERING
EP	03809817.4	01-11-2002	08-10-2003	1561184-A		NL021087	3D DISPLAY WITH INTEGRATED RENDERING
JP	2004-547857	01-11-2002	08-10-2003			[illegible]	3D DISPLAY WITH INTEGRATED RENDERING
US	10/532904	01-11-2002	08-10-2003	2005-0285936 A1		[illegible]	3D DISPLAY WITH INTEGRATED RENDERING
CN	200380107993.X	30-12-2002	24-12-2003	[illegible]		NL021409	INTEGRATED VIDEO FILTER FOR STEREO IMAGE RENDERER
EP	03778681.1	30-12-2002	24-12-2003	[illegible]		NL021409	INTEGRATED VIDEO FILTER FOR STEREO IMAGE RENDERER
JP	04-563502	30-12-2002	24-12-2003	[illegible]		NL021409	INTEGRATED VIDEO FILTER FOR STEREO IMAGE RENDERER
US	10/540672	30-12-2002	24-12-2003	[illegible]		NL021409	INTEGRATED VIDEO FILTER FOR STEREO IMAGE RENDERER
CN	200380108833.X	17-01-2003	10-12-2003	[illegible]		NL030006	COMPLETING PARTIAL DEPTH INFORMATION
EP	03768271.7	17-01-2003	10-12-2003	[illegible]		NL030006	COMPLETING PARTIAL DEPTH INFORMATION
IN	1555/CHENP/2005	17-01-2003	10-12-2003			NL030006	COMPLETING PARTIAL DEPTH INFORMATION
KR	10-2005-7013149	17-01-2003	10-12-2003			NL030006	COMPLETING PARTIAL DEPTH INFORMATION
US	10/542137	17-01-2003	10-12-2003	[illegible]		NL030006	COMPLETING PARTIAL DEPTH INFORMATION
CN	200480004808.1	21-02-2003	11-02-2004	[illegible]		NL030170	FULL PARALLAA AUTOSTEREOSCOPIC SYSTEM
EP	04710110.0	21-02-2003	[illegible]	[illegible]		NL030170	FULL PARALLAA AUTOSTEREOSCOPIC SYSTEM
JP	06-502578	21-02-2003	[illegible]			NL030170	FULL PARALLAA AUTOSTEREOSCOPIC SYSTEM
US	10/545645	21-02-2003	[illegible]	[illegible]		NL030170	FULL PARALLAA AUTOSTEREOSCOPIC SYSTEM
CN	200480006456.3	10-03-2003	[illegible]	[illegible]	CN100340952-C	NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
DE	04715431.5	10-03-2003	[illegible]		602004011907.5	NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
FR	04715431.5	10-03-2003	[illegible]		[illegible]	NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
GB	04715431.5	10-03-2003	[illegible]		[illegible]	NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
JP	06-506649	10-03-2003	27-02-2004			NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
US	10/548242	10-03-2003	27-02-2004	[illegible]		NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
CN	200480008738.0	31-03-2003	26-03-2004	[illegible]		NL030299	THREE-DIMENSIONAL DISPLAY
EP	04723630.7	31-03-2003	26-03-2004	[illegible]		NL030299	THREE-DIMENSIONAL DISPLAY
JP	06-506769	31-03-2003	26-03-2004	[illegible]		NL030299	THREE-DIMENSIONAL DISPLAY
US	10/550680	31-03-2003	26-03-2004	[illegible]	[illegible]	NL030299	THREE-DIMENSIONAL DISPLAY
CN	200480009022.4	31-03-2003	26-03-2004	[illegible]		NL030300	3D DISPLAY WITH DIRECTIONAL BACKLIGHT
EP	04723683.3	31-03-2003	26-03-2004	[illegible]		NL030300	3D DISPLAY WITH DIRECTIONAL BACKLIGHT
JP	06-506771	31-03-2003	26-03-2004	[illegible]		NL030300	3D DISPLAY WITH DIRECTIONAL BACKLIGHT
US	10/550681	31-03-2003	26-03-2004	[illegible]	[illegible]	NL030300	3D DISPLAY WITH DIRECTIONAL BACKLIGHT
CN	200480019731.5	11-07-2003	[illegible]	[illegible]		NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
DE	04744492.2	11-07-2003	05-07-2004		602004016347.2	NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
ES	04744492.2	11-07-2003	05-07-2004		[illegible]	[illegible]	3D SCALING BASED ON PROBABILITY OF VISIBILITY
FR	04744492.2	11-07-2003	05-07-2004		[illegible]	[illegible]	3D SCALING BASED ON PROBABILITY OF VISIBILITY
GB	04744492.2	11-07-2003	05-07-2004		[illegible]	[illegible]	3D SCALING BASED ON PROBABILITY OF VISIBILITY
IN	0126/CHENP/2006	11-07-2003	05-07-2004		222440	[illegible]	3D SCALING BASED ON PROBABILITY OF VISIBILITY
IT	04744492.2	11-07-2003	05-07-2004		[illegible]	[illegible]	3D SCALING BASED ON PROBABILITY OF VISIBILITY
JP	06-518475	11-07-2003	05-07-2004			[illegible]	3D SCALING BASED ON PROBABILITY OF VISIBILITY
KR	10-2006-7000605	11-07-2003	05-07-2004			[illegible]	3D SCALING BASED ON PROBABILITY OF VISIBILITY
US	10/563929	11-07-2003	05-07-2004	2006-0197783-A1	7358583	[illegible]	3D SCALING BASED ON PROBABILITY OF VISIBILITY
CN	200480022155.X	05-08-2003	28-07-2004	1830217-A		[illegible]	DEPTH MAP BASED ON EDGE DETECTION
EP	04744668.7	05-08-2003	28-07-2004	1654884-A		[illegible]	DEPTH MAP BASED ON EDGE DETECTION
IN	766/CHENP/2006	05-08-2003	28-07-2004		230256	[illegible]	DEPTH MAP BASED ON EDGE DETECTION
JP	06-522460	05-08-2003	28-07-2004			[illegible]	DEPTH MAP BASED ON EDGE DETECTION
KR	10-2006-7002454	05-08-2003	28-07-2004			[illegible]	DEPTH MAP BASED ON EDGE DETECTION
US	10/567205	05-08-2003	28-07-2004	2006-0232666-A1		[illegible]	DEPTH MAP BASED ON EDGE DETECTION
CN	200480026700.2	17-09-2003	31-08-2004	1853200A	200480026700.2	NL031094	Depth Of Field (DOF) RENDERING
EP	04769536.4	17-09-2003	31-08-2004	1665166-A		NL031094	Depth Of Field (DOF) RENDERING
JP	06-526730	17-09-2003	31-08-2004			NL031094	Depth Of Field (DOF) RENDERING
KR	10-2006-7005460	17-09-2003	31-08-2004			NL031094	Depth Of Field (DOF) RENDERING
US	10/571816	17-09-2003	31-08-2004	2007-0057944 A1	7528830	NL031094	Depth Of Field (DOF) RENDERING
CN	200480028290.5	30-09-2003	22-09-2004	1860503-A	200480028290.5	NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
DE	[illegible]	30-09-2003	22-09-2004		602004006794.7	NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
FR	04770055.4	30-09-2003	22-09-2004		1671276	NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
GB	04770055.4	30-09-2003	22-09-2004		1671276	NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
JP	06-530911	30-09-2003	22-09-2004			NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
US	10/573559	30-09-2003	22-09-2004	2007-0035530 A1		NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
CN	200480037527.6	19-12-2003	06-12-2004	1894723-A	200480037527.6	NL031480	INCREASE PERSPECTIVE OF 3D DISPLAY IMAGE
EP	04801471.4	19-12-2003	06-12-2004	1697902-A		NL031480	INCREASE PERSPECTIVE OF 3D DISPLAY IMAGE
JP	06-544612	19-12-2003	06-12-2004			NL031480	INCREASE PERSPECTIVE OF 3D DISPLAY IMAGE
KR	10-2006-7012103	19-12-2003	06-12-2004			NL031480	INCREASE PERSPECTIVE OF 3D DISPLAY IMAGE
US	10/596456	19-12-2003	06-12-2004	2009-0009536 A1		NL031480	INCREASE PERSPECTIVE OF 3D DISPLAY IMAGE
CN	200580007733.7	12-03-2004	01-03-2005	1930585-A		NL040243	DEPTH FROM CURVATURE
EP	05708894.0	12-03-2004	01-03-2005	1728208-A		NL040243	DEPTH FROM CURVATURE
IN	3758/CHENP/2006	12-03-2004	01-03-2005			NL040243	DEPTH FROM CURVATURE
JP	07-501463	12-03-2004	01-03-2005			NL040243	DEPTH FROM CURVATURE
KR	10-2006-7018261	12-03-2004	01-03-2005			NL040243	DEPTH FROM CURVATURE
US	10/598657	12-03-2004	01-03-2005	2007-0183648 A1		NL040243	DEPTH FROM CURVATURE
CN	200580011256.2	14-04-2004	08-04-2005	1942902-A		NL040363	METHOD FOR REDUCTION OF GHOST ARTEFACTS FOR RENDERING 2.75D
EP	05718674.4	14-04-2004	08-04-2005	1738331-A		NL040363	METHOD FOR REDUCTION OF GHOST ARTEFACTS FOR RENDERING 2.75D
JP	2007-507898	14-04-2004	08-04-2005			NL040363	METHOD FOR REDUCTION OF GHOST ARTEFACTS FOR RENDERING 2.75D
US	10/599821	14-04-2004	08-04-2005	2008-0267527 A1		NL040363	METHOD FOR REDUCTION OF GHOST ARTEFACTS FOR RENDERING 2.75D
CN	200580011280.5	13-04-2004	04-04-2005	1943249-A	200580011280.5	NL040376	3D DISPLAY WITH ELECTROWETTING LENTICULAR SCREEN
EP	05718626.4	13-04-2004	04-04-2005	1738589-A		NL040376	3D DISPLAY WITH ELECTROWETTING LENTICULAR SCREEN
JP	[illegible]	13-04-2004	04-04-2005			NL040376	3D DISPLAY WITH ELECTROWETTING LENTICULAR SCREEN
US	10/599790	13-04-2004	04-04-2005	2008-0316302 A1		NL040376	3D DISPLAY WITH ELECTROWETTING LENTICULAR SCREEN

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EP	05776474.8	10-05-2004	[illegible]	[illegible]		NL040877	VIEW-MODE ENCODED INZ-VALUES
IN	596/CHENP/2007	10-08-2004	[illegible]			NL040877	VIEW-MODE ENCODED INZ-VALUES
JP	07-525403	10-05-2004	[illegible]			NL040877	VIEW-MODE ENCODED INZ-VALUES
US	11/573281	10-03-2004	[illegible]	[illegible]		NL040877	VIEW-MODE ENCODED INZ-VALUES
CN	200580034913.4	13-10-2004	[illegible]	[illegible]		NL041117	OUT OF FOCUS LENTICULAR FOR 3D
EP	05784501.2	13-10-2004	[illegible]	[illegible]		NL041117	OUT OF FOCUS LENTICULAR FOR 3D
JP	2007-536297	13-10-2004	[illegible]			NL041117	OUT OF FOCUS LENTICULAR FOR 3D
US	11/576905	13-10-2004	[illegible]	[illegible]		NL041117	OUT OF FOCUS LENTICULAR FOR 3D
CN	200580036903.4	26-10-2004	[illegible]	[illegible]		NL041196	FOCUS BASED DEPTH RENDERING
EP	05819590.4	26-10-2004	[illegible]	[illegible]		NL041196	FOCUS BASED DEPTH RENDERING
JP	07-537466	26-10-2004	[illegible]			NL041196	FOCUS BASED DEPTH RENDERING
US	11/577745	26-10-2004	[illegible]	[illegible]		NL041196	FOCUS BASED DEPTH RENDERING
CN	200580039226.1	16-11-2004	[illegible]	[illegible]		NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
DE	05802412.6	16-11-2004	08-11-2005		602005006836.8	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
ES	05802412.6	16-11-2004	08-11-2005		1815441	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
FR	05802412.6	16-11-2004	08-11-2005		1815441	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
GB	05802412.6	16-11-2004	08-11-2005		1815441	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
IN	2072/CHENP/2007	16-11-2004	08-11-2005			NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
IT	05802412.6	16-11-2004	08-11-2005		1815441	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
JP	07-540788	16-11-2004	08-11-2005			NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
US	11/718917	16-11-2004	08-11-2005	2008-0187222-A1		NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
CN	200580039232.9	15-11-2004	07-11-2005	101061416-A		NL041261	2D - 3D POLARISING BACKLIGHT
DE	05800635.4	15-11-2004	07-11-2005		602005016007.E	NL041261	2D - 3D POLARISING BACKLIGHT
FR	05800635.4	19-11-2004	07-11-2005		1815288	NL041261	2D - 3D POLARISING BACKLIGHT
GB	05800635.4	18-11-2004	07-11-2005		1815288	NL041261	2D - 3D POLARISING BACKLIGHT
JP	07-542377	15-11-2004	07-11-2005			NL041261	2D - 3D POLARISING BACKLIGHT
US	11/719234	15-11-2004	07-11-2005	2009-0295689-A1		NL041261	2D - 3D POLARISING BACKLIGHT
CN	200580040177.3	24-11-2004	07-11-2005	101065702-A		NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
DE	05802334.2	24-11-2004	07-11-2005		602005007378.7	NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
FR	05802334.2	24-11-2004	07-11-2005		1817624	NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
GB	05802334.2	24-11-2004	07-11-2005		1817624	NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
JP	07-542374	24-11-2004	07-11-2005			NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
KR	10-2007-7011545	24-11-2004	07-11-2005			NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
US	11/719735	24-11-2004	07-11-2005	2009-0147160-A1		NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
CN	[illegible]	06-12-2004	05-12-2005	[illegible]		NL041369	DRIVING METHOD FOR STEREOSCOPIC DISPLAY DEVICE
EP	05826726.2	06-12-2004	05-12-2005	[illegible]		NL041369	DRIVING METHOD FOR STEREOSCOPIC DISPLAY DEVICE
JP	[illegible]	06-12-2004	05-12-2005			NL041369	DRIVING METHOD FOR STEREOSCOPIC DISPLAY DEVICE
KR	10-2007-7012482	06-12-2004	05-12-2005			NL041369	DRIVING METHOD FOR STEREOSCOPIC DISPLAY DEVICE
US	11/720526	06-12-2004	05-12-2005	[illegible]		NL041369	DRIVING METHOD FOR STEREOSCOPIC DISPLAY DEVICE
CN	200580007684.7	12-03-2004	04-03-2005	1930512A	[illegible]	NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
EP	05708543.5	12-03-2004	04-03-2005	1728116-A		NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
IN	[illegible]	12-03-2004	04-03-2005			NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
JP	07-502478	12-03-2004	04-03-2005			NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
US	[illegible]	12-03-2004	04-03-2005	2007-0177006-A1		NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
CN	[illegible]	12-01-2005	12-01-2006	[illegible]	[illegible]	NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
DE	[illegible]	12-01-2005	12-01-2006		[illegible]	NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
ES	[illegible]	12-01-2005	12-01-2006		1839267	NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
FR	[illegible]	12-01-2005	12-01-2006		1839267	NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
GB	06710664.1	12-01-2005	12-01-2006		1839267	NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
IN	3064/CHENP/2007	12-01-2005	12-01-2006			NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
IT	06710664.1	12-01-2005	12-01-2006		1839267	NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
JP	07-550909	12-01-2005	12-01-2006			NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
KR	10-2007-7018461	12-01-2005	12-01-2006			NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
US	11/813110	12-01-2005	12-01-2006	2009-0003728-A1		NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
CN	200580005096.X	17-02-2004	07-02-2005	1922631-A	200580005096.X	NL050010	DEPTH FROM PATH TO BORDER
DE	05702909.2	17-02-2004	07-02-2005		602005004125.7	NL050010	DEPTH FROM PATH TO BORDER
FR	[illegible]	17-02-2004	07-02-2005		1719079	NL050010	DEPTH FROM PATH TO BORDER
GB	[illegible]	17-02-2004	07-02-2005		1719079	NL050010	DEPTH FROM PATH TO BORDER
IN	3384/CHENP/2006	17-02-2004	07-02-2005			NL050010	DEPTH FROM PATH TO BORDER
JP	06-553726	17-02-2004	07-02-2005			NL050010	DEPTH FROM PATH TO BORDER
KR	10-2006-7016549	17-02-2004	07-02-2005			NL050010	DEPTH FROM PATH TO BORDER
US	10/597976	17-02-2004	07-02-2005	2007-0146232-A1		NL050010	DEPTH FROM PATH TO BORDER
CN	200680002547.9	18-01-2005	12-01-2006	101107644-A		NL050033	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
EP	06710666.6	18-01-2005	12-01-2006	1842179-A		NL050033	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
IN	3135/CHENP/2007	18-01-2005	12-01-2006			NL050033	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
JP	07-550910	18-01-2005	12-01-2006			NL050033	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
US	11/814098	18-01-2005	12-01-2006	2009-0115800-A1		NL050033	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
CN	03815087.5	27-06-2002	10-06-2003	1666137	03815087.5	US020226	ELECTRICALLY CONFIGURABLE PHOTONIC CRYSTAL
EP	03735892.6	27-06-2002	10-06-2003	1520202-A		US020226	ELECTRICALLY CONFIGURABLE PHOTONIC CRYSTAL
JP	04-517085	27-06-2002	10-06-2003			US020226	ELECTRICALLY CONFIGURABLE PHOTONIC CRYSTAL
US	10/183803	27-06-2002	27-06-2002	2004-0001246-A1	6738178	US020226	ELECTRICALLY CONFIGURABLE PHOTONIC CRYSTAL

Schedule B
Licensed Know-How and Licensed Software

The Licensed Know-How is based on the 3D Technology, developed by the former Philips incubator 3DSolutions, and implemented in several prototypes.
The Licensed Know-How includes:

1. available technical documentation on product designs, manufacturing process description and equipment specifications,
2. available rendering firmware,
3. available 3D content creation software.

The Licensed Know-How will be provided "as-is" and is handed over by enabling access for Licensees employees to the documentation, firmware and software relevant to the 3D Technology.

Details on [1] technical documentation on product designs, manufacturing process description and equipment specifications:

- all documentation which is available in 3 archives:
  - TPD archive
  - Software archive
  - Departmental archive
- Lens design software

Details on [2] rendering firmware:

- Firmware archive (including schematics of Hydra, Spartak, SpartakNext)
- Firmware download tool

Details on [3] 3D content creation software:

- Software:
  - Display control tool
  - Player API
  - MediaPlayer9
  - Settings API
  - Monitor540_1080
  - MediaSequencer
  - WOWzone application
  - WOWvx Player
  - WOWvx Spacer
  - WOWvx BlueBox server
  - WOWvx BlueBox configurator
  - Compositor
  - BlueBox server configuration scripts
  - DirectX visualize
  - OpenGL control & visualiser
  - B3D source filter

    - 3DS MAX rendering plugins
    - Maya rendering plugins
    - Red Box
- Description of the software
- Documentation / manuals, when available.

3D prototype equipment and he use of 3D prototype equipment is not included in the Licensed Know-How. This equipment is managed by Philips Miplaza; Licensee can discuss access to the equipment via a rental arrangement to be agreed upon and signed between Licensee and Philips MiPlaza.

Equipment, prototype displays, components or other types of physical subjects are not included in the Licensed Know-How.

Philips remains the owner of the Licensed Know-How. Where available, a copy of the documentation, firmware and software will be provided.

The hand-over period will end 6 months after the effective date of the Agreement.

Schedule C
running royalty

[1] Royalty fee applicable to hardware sales by 3DFusion and / or its Affiliates (e.g. 3D Displays and 3D Rendering Box):

1,5% on Total Net Turnover, with a minimum of:

3D Display Size	Up to 6"	6"-9.9"	10"-13.9"	14"-19.9"	20"-26.9"	27"-36.9"	37" and up
Royalty (Euro)	1.00	1.25	2.00	3.00	4.00	6.00	9.00
Royalty fee per 3D Rendering Box: 9.00 euro							

[2] Royalty fee applicable to delivery of 3D Content Services by 3DFusion and / or its Affiliates and 3D Content Creation Tools by 3DFusion and / or its Affiliates:

3% on Total Net Turnover.

"Total Net Turnover" shall mean all revenue generated by or for Licensee through the sale or other disposal of Licensed Products to customers less duties and sales taxes actually incurred by Licensee.

The rate of exchange for the minimum royalty fee from Euro to US Dollar shall be the European Central Bank (ECB) fixing rate of the relevant currency as officially quoted by the European Central Bank for payment of currency transactions on the day that the amount is due and payable.

Schedule D
Royalty Reporting Form

Koninklijke Philips Electronics N.V.
c/o Philips Intellectual Property & Standards
GSA and Licenses Administration Department
P.O. Box 220
5600 AE Eindhoven
The Netherlands
Fax no.: + 31 40 27 45267

Date:
Company name:
Manufacturing site:
City:
Country:

Reference: Royalties

This is to provide you with our royalty statement under the Technology Licensing Agreement of [date] between our companies, which covers the relevant business of Licensed Products for the [*1st*, *2nd*, *3rd*, *4th*] calendar quarter of [year]. The total fee is to be calculated in conformity with Section 4.2 of and Schedule C to said agreement.

Licensed Product, (serial number)	Description	Applicable Royalty Rate	Calculation of Applicable Royalty Amount		Total Royalty fee due in Euro
				Gross amount due	
				Less withholding tax (if applicable)	
				Net amount due	

I attest that the above is true, complete and accurate.

Signed on behalf of 3D Fusion
Name:
Title:

Exhibit E

3DFusion, Corp.

Mutual Non-Disclosure and Confidentiality Agreement

THIS AGREEMENT made on June 9th, (the "Effective Date") by and between 3DFusion, Corp. ("3DFusion"), a Delaware corporation, whose address is 110 Wall Street, 7th Floor, New York, NY 10005, and STREAM TV NETWORKS INC whose address is 2009 CHESTNUT STREET PHILADELPHIA PA 19103;

WHEREAS, Parties possesses certain confidential information and/or proprietary information and/or trade secrets, and;

WHEREAS, in connection with Business Purposes between the Parties, confidential information and/or proprietary information and/or trade secrets of one Party may become available to the other Party; and,

WHEREAS, each Party desires to prevent the unauthorized use and disclosure of its confidential information, proprietary information and trade secrets.

NOW THEREFORE, in consideration of the mutual covenants, terms and conditions and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree that the Disclosing Party will provide to the Recipient, certain confidential and proprietary information for Business Purposes in accordance with the following terms and conditions:

1. DEFINITIONS

1.1 Business Purposes

The pursuit, evaluation and/or feasibility assessment of a potential or actual business relationship, and/or the consummation of a transaction between Parties.

1.2 Confidential Information:

Any and all non-public technical and non-technical information provided by the Disclosing Party to the Recipient, whether conveyed verbally, in writing, electronically or by any other means, including but not limited to (i) patent and patent applications; (ii) trade secrets; and (iii) Derivative Materials, proprietary information including, but not limited to, ideas, sketches, techniques, drawings, works of authorship, models, inventions, know-how, processes, apparatuses, equipment, algorithms, Software programs, Source Code, Software source documents, and formulae related to the current, future and proposed products and services of each of the Parties, and including, without limitation, their respective information concerning business strategies, research, experimental work, development, design details and specifications, engineering, financial information, procurement requirements, purchasing, manufacturing, client and customer lists, investors, employees, business and contractual relationships, business forecasts, sales, merchandising, marketing plans and information the Disclosing Party provides regarding itself or

third parties. Confidential Information also includes, but is not limited to any and all information disclosed by the Disclosing Party to the Recipient that is marked "confidential" or "proprietary.

Confidential Information does not include any information that the Recipient can demonstrate is:

1.2.1 rightfully known prior to disclosure;

1.2.2 rightfully obtained from a third party authorized to make such a disclosure, without breach of the terms and conditions of this Agreement;

1.2.3 independently developed by the Recipient as demonstrated by contemporaneous documents;

1.2.4 available to the public without restrictions;

1.2.5 approved for disclosure with the prior written approval of the Disclosing Party; or

1.2.6 disclosed by court order or as otherwise required by law, as set-forth in 2.7 of this Agreement.

1.3 Derivative Material:

May or may not consist of business related documents, computer program Source Code as determined solely by the Disclosing Party from time to time, and any written or computer based materials or instructions, including but not limited to, Documentation, computer or code or information, manuals or memos in any format whatsoever, system performance specifications or information, or system security measures or information provided from the Disclosing Party to the Recipient.

1.4 Disclosing Party:

A Party to this Agreement or a Party's Representatives that discloses or has disclosed Confidential Information to a Recipient.

1.5 Documentation:

The Disclosing Party's published or unpublished business and/or technical documents, memos, emails or any other source of information.

1.6 Permitted Use:

Use of Confidential Information for Business Purposes as defined herein.

1.7 Party:

Any Person who is Mr. Mark Frick, and/or 3DFusion, including their respective Representatives, as it relates to this Agreement and which shall be referenced herein as Party, Parties or Party's as the case may be.

1.8 Person:

An individual, partnership, limited liability company, joint venture, corporation, trust, unincorporated association, any other entity, or a government or any department or agency or other unit thereof.

1.9 Recipient

A Party to this Agreement or a Party's Representatives that received or receives Confidential Information from a Disclosing Party.

1.10 Representative:

With respect to any Person, its directors, officers, employees, agents, consultants, advisors or other representatives.

1.11 Software:

The electronic instructions written and existing in both object and source code format or otherwise for computers, that now exists or may exist in the future, and is owned by the Disclosing Party and any related computer software modules, updates, modifications, interim releases, bug fixes and patches applicable to such software.

1.12 Source Code:

The Software fully documented in its human readable form; and/or (i) a compiler, or similar computer program or any other software which is necessary to convert the Source Code form into the object code form of the Software; and/or (ii) runtime software necessary to execute the Source Code form of the Software, including but not limited to interpreters and templates.

2. CONFIDENTIALITY

All Confidential Information shall remain the sole property of the Disclosing Party, and the Recipient shall have no interest in or rights with respect thereto, except as expressly set forth in this Agreement. Parties further agree:

2.1 Obligation to Maintain Confidentiality:

During and after the term of this Agreement, the Recipient shall, and shall cause each of its Representatives, to keep Confidential Information confidential and to protect such Confidential Information from unauthorized use, access or disclosure in the same manner that it protects its own similar Confidential Information, but in no event with less care than a reasonably prudent business would exercise. Without limiting the effect of the previous sentence or the foregoing, the Recipient shall not and shall cause its Representatives not to:

2.1.1 disclose any of the Confidential Information to any Person except:

(i) with the prior written consent of an Officer of the Disclosing Party; or

(ii) as otherwise expressly permitted by this Agreement.

2.1.2 use any of the Confidential Information in any way detrimental to the Disclosing Party, it being acknowledged by the Recipient that any use other than in connection with the Business Purposes is detrimental.

2.1.3 directly or indirectly, in any way, reveal, report, publish, disclose, transfer or otherwise use any of the Confidential Information except as specifically authorized by Disclosing Party in accordance with this Confidentiality Agreement.

2.1.4 reverse engineer, decompile or disassemble any hardware or software received from the other Party for any purpose inconsistent with this Agreement.

2.1.5 use any Confidential Information to compete or obtain unfair advantage in any commercial activity which may be comparable to the commercial activity contemplated by the Parties in connection with the Business Purposes.

2.2 Unauthorized Use:

The Recipient shall give prompt written notice to the Disclosing Party of any unauthorized use or disclosure of the Confidential Information and shall assist the Disclosing Party in remedying each unauthorized use or disclosure. Any assistance by Recipient does not waive any breach of this Agreement, nor does acceptance of the assistance constitute a waiver of any breach of this Agreement.

2.3 No Right to Confidential Information:

Recipient hereby agrees and acknowledges that:

2.3.1 no license, either express or implied, is hereby granted to Recipient by the Disclosing Party to use any of the Confidential Information:

2.3.2 all inventions, improvements, copyrightable works and designs relating to business plans, marketing plans, technology, machines, methods, compositions, or products of Disclosing Party directly resulting from or relating to the Confidential Information and the right to market, use, license and franchise the Confidential Information or the ideas, concepts, methods or practices embodied therein shall be the exclusive property of the Disclosing Party, and Recipient has no right or title thereto.

2.4. Rights and Licenses:

This Agreement and the furnishing of "Confidential Information" by the Disclosing Party shall not be construed as establishing, either expressly or by implication, any grant of rights or licenses to Recipient or any relationship between the Parties.

2.5 Permitted Disclosees:

The Recipient may disclose Confidential Information to only those of its Representatives who:

2.5.1 require the Confidential Information for the Permitted Use but to the extent practicable, only the part that is required; and

2.5.2 are informed by the Recipient of the confidential nature of the Confidential Material; and

2.5.3 are bound by the obligations of this Article and who are under a duty of confidentiality no less restrictive than that set forth herein.

2.6 Termination; Return and Destruction of Confidential Information:

Upon the termination of this Agreement, the Recipient shall, and shall cause its Representatives to promptly, but in any event no later than ten (10) days after termination:

2.6.1 return to the Disclosing Party all Confidential Information furnished to the Recipient or any of its Representatives; and

2.6.2 destroy all Derivative Material and upon destruction, the Recipient shall certify in writing to the Disclosing Party that it has done so.

2.6.3 Notwithstanding anything to the contrary herein, in the event that Recipient is required by law or regulation to retain Confidential Information for compliance purposes, such Recipient and its Representatives shall:

2.6.3.1 retain one copy consisting of only the Confidential Information required for compliance purposes; and,

2.6.3.2 be subject to the obligation to maintain confidentiality of such retained Confidential Information until such time as Recipient complies with the provisions of this Section 2.6.1 and 2.6.2.

2.7 Compelled Disclosure:

If the Recipient or any of its Representatives is requested, becomes legally compelled or is required, in any case by a court or governmental body, to make any disclosure of Confidential Information (a "Compelled Representative"), the Recipient shall:

2.7.1 promptly, but in any event no later than three (3) days after the Recipient becomes aware that it is required to make such disclosure notify the Disclosing Party in writing;

2.7.2 consult with and assist the Disclosing Party, at the Disclosing Party's expense, in obtaining an injunction or other appropriate remedy to prevent such disclosure;

2.7.3 use its best efforts to obtain at the Disclosing Party's expense, a protective order or other reliable assurance that confidential treatment will be accorded to any Confidential Information that is disclosed.

2.8 Right to Disclose:

Subject to the provisions of Section 2.7, the Recipient or the Compelled Representative may furnish that portion and only that portion of the Confidential Information that, in form and substance reasonably acceptable to the Disclosing Party, the Recipient or the Compelled Representative is legally compelled or otherwise required to disclose.

2.9 Term:

Despite any other provision of this Agreement, the provisions of this Article 2 herein survives any termination of this Agreement or the consummation of the transactions that this Agreement contemplates for a period of five (5) years with respect to non-technical information and in perpetuity with respect to technical information, including the Software and Derivative Materials.

3. GENERAL PROVISIONS

3.1 Indemnity:

The Recipient hereby agrees to indemnify the Disclosing Party against any and all losses, damages, claims, expenses, and attorneys' fees incurred or suffered by the Disclosing Party as a result of a breach of this Agreement by the Recipient or its Representatives.

3.2 Remedies; Injunctive Relief:

The Recipient understands and acknowledges that any disclosure or misappropriation of any Confidential Information in violation of this Agreement may cause the Disclosing Party irreparable harm, the amount of which may be difficult to ascertain, and therefore agrees that the Disclosing Party shall have the right to apply to a court of competent jurisdiction for specific performance and/or an order restraining and enjoining any such further disclosure or breach and for such other relief as the Disclosing Party shall deem appropriate, without the posting of a bond or other security and, without proof of actual damages. Such right of the Disclosing Party is to be in addition to any other remedies otherwise available to the Disclosing Party at law or in equity.

3.3 No Additional Agreements:

In the absence of any other written agreements between the Parties, neither the holding of discussions nor the exchange of ideas, material or information shall be construed as an obligation of either Party to perform any work, enter into any license, business engagement or other agreement with the other Party. Parties hereby acknowledge that they are not agents of each other. Nothing in this Agreement shall prohibit a Party from providing its own Confidential Information to third parties and entering into agreements with third parties. Each Party reserves the right, in its sole discretion, to reject any and all proposals made by the other Party or its Representatives with regard to a transaction between the Parties and to terminate discussions or negotiations at any time.

3.4 Severability:

If any provision of this Agreement is determined to be invalid, illegal or unenforceable, the remaining provisions of this Agreement remain in full force, provided that the essential terms and conditions of this Agreement for each Party remain valid, binding, and enforceable.

3.5 Governing Law:

The laws of the State of New York (without giving effect to its conflict of laws principles) govern all matters arising out of or relating to this Agreement, including without limitation, its interpretation, construction, performance, and enforcement. Parties hereby irrevocably consent to the jurisdiction of the state and federal courts located in the city of New York, State of New York, in any action arising out of or relating to this Agreement, and waive any claim that any such action or proceeding brought in any such court has been brought in an inconvenient forum.

3.6 Captions; Number; Gender:

The descriptive headings of the Articles, Sections, and subsections of this Agreement are for convenience only, do not constitute a part of this Agreement, and do not affect this Agreement's construction or interpretation. Any reference in this Agreement to the singular includes the plural where appropriate, and any reference in this Agreement to the masculine gender includes the feminine and neuter genders where appropriate.

3.7 Entire Agreement:

This Agreement constitutes the sole understanding of the Parties about the subject matter set out herein and may not be amended or modified except in writing signed by each of the Parties to the Agreement and supersedes all prior or contemporaneous proposals, agreements, representations and understandings, whether written or oral. with respect to the subject matter. This Agreement shall not limit any rights that either Party may have under trade secret, copyright, patent or other laws that may be available.

As to 3DFusion:
Ilya Sorokin

Signature

CEO

As to: STREAM TV NETWORKS, INC

Signature

Title: CEO

ADDENDUM TO AGREEMENT

On this 11th day of June 2010, Stream TV Networks, Inc. ("STV") and 3D Fusion, Inc. ("Fusion") (both parties collectively "Parties") desire to amend ("Amendment") a written agreement between them dated on or about June 9, 2010 concerning non-disclosure and confidentiality ("Agreement") according to the terms hereof.

WHEREAS, STV and Fusion have begun negotiating terms of a possible transaction in connection with the business purposes of the Agreement;

WHEREAS, the Parties desire to ensure the information below will be expressly covered by the Agreement and as described herein;

NOW THEREFORE, the Parties agree, intending to be legally bound hereby, agree as follows:

> The Parties have been negotiating a possible transaction in connection with the business purposes of the Agreement ("Transaction"). Fusion specifically agrees that it shall treat the negotiations and mere existence of such Transaction discussions, and all terms thereof, including specifically but not limited to the involvement and identity of STV, its affiliates or employees and principals as the persons or entities in such discussions with Fusion ("Transaction Discussions") in strictest confidence and limited to employees of Fusion. Moreover, Fusion shall not use the Transaction Discussions or any disclosure thereof to aide in any way their negotiations with any third parties.

Except as otherwise indicated above, all other terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the Parties by their duly authorized representatives have executed this Addendum to Agreement on the date first written above.

3D Fusion, Inc.	Stream TV Networks, Inc.
(Signature)	(Signature)
Ilya Sorokin CEO, 3D Fusion, Inc.	Mathu Rajan CEO, Stream TV Networks, Inc.

Exhibit F

9/11

AGREEMENT

On this 28th day of September, 2010, Stream TV Networks, Inc. ("Stream), and 3D Fusion, Inc. ("Fusion) and its founders Ilya Sorokin and Steve Blumenthal ("Fusion Founders"), (all parties collectively "Parties") desire to enter into a multi-party agreement as described herein ("Agreement").

WHEREAS, Stream and Fusion have executed a confidentiality and non-disclosure agreement dated on or about June 9, 2010 and an addendum/amendment to ensure confidentiality of additional information dated on or about June 11, 2010 (both documents collectively "NDA") to explore an investment or strategic partner relationship; and

WHEREAS, the Parties have reached an understanding and wish to memorialize the primary terms thereof.

NOW THEREFORE, the Parties, intending to be legally bound hereby, agree as follows:

1. Confidentiality of Transaction Discussions: Fusion and Fusion Founders agree that the instant Agreement including Exhibit A and all discussions around same including but not limited to the fact the discussion are taking place shall be deemed confidential and fully covered and part of the NDA .

2. Binding Nature. The Parties agree, in full consideration of the time and expense that shall be expended by each party, to be bound by the transaction outlined in this Agreement and attachments hereto (hereinafter, the "Transaction") upon execution of definitive agreements comprising customary terms and conditions including the material terms and conditions in this Agreement and attachments thereto.

IN WITNESS WHEREOF, the Parties, by their duly authorized representatives, have executed this Agreement on the date first written above.

3D Fusion, Inc.	**Stream TV Networks, Inc.**
______________________ Ilya Sorokin CEO, 3D Fusion, Inc. <Seal.>	Mathu Rajan ______________________ Mathu Rajan CEO, Stream TV Networks, Inc. <Seal>
______________________ Ilya Sorkin, individually	Mathu Rajan ______________________ Mathu Rajan, Individually
______________________ Steve Blumenthal, individually	______________________ Raja Rajan, Individually

Attachment A

Capitalization Strategy

Stream is attempting to raise capital for its own business strategies and intends to allocate funds towards the development and commercialization of Fusion's 3D-related business opportunities. Under the terms herein, Fusion agrees to provide complete support to Stream to fulfill its capitalization strategy.

Stream agrees that it will keep Fusion informed of the capitalization efforts as the process commences.

Post-Capitalization Structure

Stream intends to become an operating subsidiary of a holding company ("HoldCo") that may be newly-formed. It is understood that all the rights and obligations herein granted to Stream shall be fully assignable to and assumable by Holdco. It is intended that Fusion (or all its assets in a newly-formed entity) shall become a separate subsidiary of HoldCo jointly owned by HoldCo and the current owners of Fusion ("3D Sub"). Fusion shall have representation at HoldCo Board Level if the Strategic Option below is exercised.

3D Fusion Restructure

The Parties understand that the 3D Sub may either be the current Fusion entity or a newly-formed entity that purchases 100% of the assets of Fusion and only assumes agreed-upon liabilities after which the current Fusion entity shall be wound down and closed. In the event that the 3D Sub is a restructure of Fusion the assets that shall be included in the asset purchase at a minimum shall be all intellectual property, know how, and trade secrets whether patent applications have been filed or not, all equipment and samples, all sales orders, contracts and opportunities, all employees hired and to be hired under contract and not, all subsidiaries including but not limited to the Dutch subsidiary for the Eindhoven based employees and facilities. All liabilities assumed by 3D Sub shall be identified and approved as part of the closing documents. One of the assumed liabilities shall be the inventor royalties already recorded with US Patent and Trademark offices with regard to the currently pending filings; however, it is understood that financial arrangement for employment contracts for the 3D Sub for founders shall take into account the possible

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remuneration for these royalties when salaries are to be negotiated hereunder.

Employment

Mr. Sorokin and Mr. Blumenthal ("Fusion Founders") shall be employed by the 3D Sub to lead that entity's operations. Employment agreements for their employment shall include customary terms and conditions including non-competition clauses and shall each have duration terms of three years in length. The contracts shall also provide that terminations without cause will result in accelerated payment to each Fusion Founder of their full salary that would be payable during the remaining term and vesting of options including any prior "unpaid salary difference" (see below). The employment agreements shall include a well-defined bonus structure and shall specify mutually acceptable current salaries, and also specify the full agreed-upon base salaries, that will be reached as 3D Sub has sufficient funding until then the unpaid salary difference will be carried as the debt on the books of the 3DSub. In addition to the definition of the bonus structure, it is agreed that 5% of the monthly profits be allocated to Fusion Founders to be applied against such debt, until the agreed upon full salary levels are reached. The employment agreements shall be part of the definitive documents for the closing of the investment described herein.

Board of Directors

The board of directors of the 3D Sub, upon the first tranche of the Start Up Funds, shall commence with the HoldCo having one seat with one observer seat with two seats for Fusion Founders. Upon HoldCo investing the total Start Up Funds it shall be entitled to two seats equal to the two seats of Fusion Founders. If the complete funding goals of HoldCo specified below are not met thereafter, HoldCo agrees that is shall give up half of its seats on the board as required to make room for alternative investors who do provide the funding. Additional members shall be added by mutual consent. Holdco agrees that it shall regularly report at the 3D Sub board meetings its own strategic decisions and business directions, as well as on its financial and business performance. 3D Sub agrees it shall provide customary reports and financial information to HoldCo as required as part of its investments in 3D Sub.

Investor Rights Agreement

The 3D Sub shall not (i) liquidate, dissolve or wind up the affairs of the 3D Sub; (ii) amend, alter, or repeal any provision of the formation documents of the 3D Sub; (iii) purchase or redeem or make any distribution on any equity interest in the 3D Sub, other than as defined in this document; (iv) increase or decrease the size of the Board, (v) make any loan or advance to, or own any stock or other securities of, any subsidiary or other limited liability company, corporation, partnership, or other entity unless it is wholly-owned by the 3D Sub (vi) make any loan or advance to any person, including, any employee or director, except advances and similar expenditures in the ordinary course of business or under the terms of a employee incentive plan approved by the Board; (vii) make any investment other than investments in prime commercial paper, money market funds, certificates of deposit in any United States bank having a net worth in excess of $1,000,000,000, or obligations issued or guaranteed by the United States of America, in each case having a maturity not in excess of two years; (viii) incur any aggregate indebtedness in excess of $100,000 that is not already included in a Board-approved budget, other than trade credit incurred in the ordinary course of business; (ix) enter into or be a party to any transaction with any director, officer or employee of the 3D Sub or any "associate" (as defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934) of any such person; (x) change the principal business of the 3D Sub enter new lines of business, or exit the current line of business; (xi) sell, transfer, license, sublicense, pledge or encumber technology or intellectual property; or (xii) sell or dispose of all of its assets or equity without the consent of one of the two Fusion Founders and the consent of the authorized representative of HoldCo for such decisions. Such required consent shall exist for HoldCo so long as it owns or otherwise has rights to (by convertible debt or other equity right) 19% and for Fusion Founders while they collectively own more than 19% of 3DSub.

For purposed of clarity, HoldCo shall not use its investor rights to prevent 3DSub from raising additional funds alternative to HoldCo as long as such third party investment will not in HoldCo's opinion impair funds already invested.

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Ownership

Structure

The 3D Sub shall commence with 100% of it being owned by Fusion Founders. HoldCo may provide funds to commence operations within the 3D Sub ("Start Up Funds") up to $5,000,000 in total. The Start Up funds may be in tranches if mutually agreed upon in writing when the Parties complete their financial projections.

Subsequently, HoldCo shall have the right at its discretion to contribute funds earmarked for growth in 3D Sub or any mutually agreed upon spin off company designed to commercialize an opportunity developed by 3D Sub ("Growth Funds").

Start Up Funds

The Start Up Funds shall be issued as Senior Lien Convertible Debt, that accrues interest at 18% per annum with a 24 month Maturity that shall have ability to convert into 29% of the 3D Sub if not paid in full with accrued interest and costs, if any. As the Start Up funds are provided, cashless/nominal conversion Warrants shall be issued to HoldCo equal to 20% of the 3D Sub fully diluted equity for the entire Start Up Funds. All mutually agreed tranches less than the entire $5,000,000 shall be pro-rated for purposes of the warrants and shares for conversion. For the avoidance of doubt, if the entire Start Up Funds are provided and the debt is converted in such case HoldCo shall own 49% of the 3D Sub before any of the performance events mentioned below are met. Monies spent towards securing the Philips license shall be counted towards the Start Up Funds even if it doesn't flow through 3D Sub initially but, it is understood that the Parties still need to resolve as closing condition how to provide HoldCo sufficient protections for monies advanced towards the Philips license if placed into the 3D Sub before it reaches financial stability and while it remains a minority shareholder but not impair 3D Subs ability to raise alternative capital if HoldCo does not complete financing of the Start Up Funds.

Growth Funds

The Growth Funds shall purchase equity of the Company equal to an additional 21% of the 3D Sub for $20,000,000 if exercised by HoldCo. The Growth Funds may only be invested by HoldCo as a single tranche unless mutually agreed otherwise and only upon the end of the term of the convertible debt from Start Up Funds or earlier if the convertible debt is paid in full.

3rd Party Investment and Prepayment

After HoldCo's investment of the first tranche, in an amount to be agreed upon, in the Start Up Funds, the balance of the tranches of Start Up Funds should be identified as part of the financial

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forecasts for the 3D Sub as part of the Closing Conditions. In the event they are not identified in such plan by mutual agreement, then HoldCo shall only have 90 days from request of the 3D Sub to invest additional funds under the terms provided in this Agreement. If HoldCo is unable to meet an agreed tranch payment or separate request for funds from 3D Sub, 3D Sub then may obtain 3rd Party funding immediately and HoldCo waives the right of first refusal for any 3rd Party offer obtained but HoldCo shall maintain its preemption rights to maintain its pro-rata share. Until Maturity, the 3D Sub shall have an option to prepay the debt at anytime the HoldCo does not provide additional funding as identified herein. Obtaining 3rd Party Funds alone in such manner shall not trigger an acceleration of the convertible debt. Additionally, HoldCo exercising its right of first refusal on the post StartUp 3rd Party investment offer also shall not accelerate the maturity of the convertible debt.

Conversion and Acceleration of Debt

HoldCo may but is not required to accelerate and convert the debt into equity as provided above under any of the following conditions: a) HoldCo invests the Growth Funds into the 3D Sub before Maturity at 3D Sub's request; b) the debt Matures and is not repaid by 3D Sub; c) there is an exit event before Maturity. The debt shall contain customary protections and terms including those relating to acceleration of all amounts due in the event of conditions that may affect the 3D Subs ability to repay the obligations.

Anti-Dilution

The Warrants issued to HoldCo shall have full ratchet anti-dilution so that all equity or equity rights issued by the 3D Sub shall allow the amount of the Warrants to be adjusted to maintain the 20% ownership of the 3D Sub. The anti-dilution right for the Warrants expire if and when the 3D Sub pays off all amounts due on the convertible debt before Maturity and has an additional cash on its balance sheet sufficient to cover necessary company expenses for six months. Similarly, the amount of equity that the debt may be converted (29%) into equity of the 3D Sub shall also maintain the same anti-dilution rights except such rights expire on repayment of the debt if repaid before Maturity.

HoldCo shall have a right, as qualified below, provide additional capital to obtain an additional 21 % of 3D Sub for $20 million , paid in a single tranche as part of the Growth Funds. (An example

of the ownership structure including the options described below is contained in Exhibit A) .

It is agreed that additional investments from any party, option grants for employees and advisors shall all be dilutive of the ownership configurations specified herein.

License

The 3D Sub shall grant Stream/HoldCo:

a) an exclusive worldwide license to all its technologies (including software and/or middleware and any auto conversion functions) to enable sale of devices with displays smaller than 20" for all consumer-related applications, for which Stream has product offerings (Stream is not requesting any manually driven blue box content conversion tools or devices). It is also understood that the exclusive license herein shall be limited to consumers as the end user (not medical or commercial applications for example) All Stream products should clearly identify 3DSub as the source of technology. HoldCo agrees that it shall in good faith consider and negotiate alterations of the exclusive license as opportunities may arise for the 3D Sub for devices identified in this subsection.
b) a non-exclusive worldwide license to all its technologies (including software and/or middleware and any auto conversion functions) to enable sale of all devices for all consumer related applications under the condition that for these goods Stream will obtain the consent of the 3D Sub, which shall not be unreasonably withheld, based on the terms and conditions acceptable to 3DSub which it shall use good faith efforts to provide. Such terms and conditions shall include reaching agreement on both a) intended pricing and product bundling by HoldCo so 3D Subs sales efforts are not likely to be cannibalized; and b) that 3D Sub is additionally compensated for consumer markets that it develops without HoldCo but which it is willing to forego to HoldCo for such additional compensation.

It is agreed that Stream will pay the 3D sub the royalty rate for each piece for a) the amount that the 3D sub pays Philips as part of the license (as if 3D sub sold the product itself) and b) the equivalent amount per piece for the 3D sub as royalty for its technology, unless different amounts are mutually agreed upon otherwise. It is agreed that if and when 3D Sub is able to demonstrate from 3rd party market demand in market of HoldCo/Stream that their royalty rate should be increased then such adjustment shall occur with 90 days notice and the royalty being at a 30% discount to such increased price. Similarly, if HoldCo is able to

demonstrate that the royalty being paid is too high due to lack of issued patents or otherwise, then the royalty shall be adjusted downward with 90 days notice.

For the non-exclusive license, if the manufacturing rights are granted, 3D Sub will provide guidance and full support in developing those products under the licenses herein for additional consulting fee and travel expenses, if required which shall be negotiated in good faith in consideration of market prices and HoldCo's discounted investment in 3D Sub; however, if the 3D sub is required to manufacture any of the actual devices that are part of the licenses then additional compensation for the goods must be mutually agreed upon.
All non-automatic content work is to be provided exclusively by 3DSub for all licensed products.

Fusion Founder Options

Fusion Founders shall be granted options/restricted stock in number so that upon vesting shall allow Fusion Founders total fully diluted ownership (with only the issuances identified herein and any additional issuances would be dilutive) to equal total 60% of the 3D Sub (more if the convertible debt is paid off as provided). Vesting of these options/restricted stock shall occur upon: 1) the 3D Sub attaining a pattern of financial stability before the one year anniversary of receipt of the Start Up Funds (the definition of financial stability is to be agreed upon by the Parties for the definitive documents upon agreeing upon a financial plan) ; 2) upon obtaining the validation of a mutually selected independent third party expert/firm that the currently filed patent and provisional patent applications in (listed on Exhibit B hereto) a) are likely to issue in the future, with any changes or modifications and b) upon issuance with such changes if any, would protect and block the technologies and techniques to largely eliminate the viewing angle issues and overall viewing experience limitations of the Philips patents and technologies (in essence the approved patents would become indispensable for the Philips technologies and patents to be commercialized) ("Performance B") The amount of options to vest for Performance A and B (whatever takes place first) is identified on Exhibit A hereto.

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Duration Restrictions

The Parties agree that they shall fully cooperate with each other and provide best efforts in working towards a closing of the

transaction described herein. For all the good and valuable consideration described herein and the costs and expenses that have been and will be incurred by each party, the Parties agree they shall not shop for or seek any alternative financing or capitalization except for that which is described herein for a period of ninety days from completion of the Closing Deliverables (defined below)and consent to the final Definitive Agreements (mentioned above). If a closing has not occurred within that time period then the obligations herein expire except for those relating to confidentiality.

Closing Deliverables

The "Closing Deliverables, at a minimum, that shall be provided by Fusion are:

a. Eindhoven employees ready to execute approved contracts;
b. Preliminary plans for Eindhoven facilities,
c. Current patent applications and IP strategy call with 3DF patent counsel;
d. Detailed liability description of all liabilities and assets that are to be part of the 3D sub.
e. Mutually agreed upon detailed financial projections of the 3D sub operations through 2011 including projected P/L, Balance Sheet, and Cash Flow.

Choice of Law

The Parties agree they shall try to resolve all their disputes amicably and directly in the event that a conflict arises. In the event that amicable resolution is not reached, then the Commonwealth of Pennsylvania and the county of Philadelphia shall be the exclusive choice of law and jurisdiction regardless of conflict of law principles.

Expenses

The Parties agree that they shall bear their own costs of this transaction which shall include legal costs, financial services costs, other professional services, travel, etc.

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Exhibit A
(Ownership Example)

New One 8-27-2010
Example

If Convertible Debt Not Repaid

Who	Event	Issuance	Cumu		3D F Cumu	3DF %	HoldCo Cu	HoldCo %
3DF	Start	5,000	5,000		5,000	100%	0	0%
HoldCo	$5m^	4,900	9,900		5,000	51%	4,900	49%
3DF	Perfm A*	4,000	13,900		9,000	65%	4,900	35%
HoldCo	$5m	1,700	15,600		9,000	58%	6,600	42%
HoldCo	$20m	4,900	20,500		9,000	44%	11,500	56%
3DF	Perf B*	8,000	28,500		17,000	60%	11,500	40%

* vests (not new issue)
^ warrants + stock

If Convertible Debt Repaid-Only Start Up Funds from Holdco

Who	Event	Issuance	Cumu		3D F Cumu	3DF %	HoldCo Cu	HoldCo %
3DF	Start	5,000	5,000		5,000	100%	0	0%
HoldCo	$5m^	1,250	6,250		5,000	80%	1,250	20%
3DF	Perfm A*	2,500	8,750		7,500	86%	1,250	14%
3DF	Perf B*	8,000	16,750		15,500	93%	1,250	7%

* vests (not new issue)
^ warrants not stock

Exhibit B
(Current Patent and Provisional Applications)

Exhibit G

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TERMINATION AGREEMENT

On this 5th day of January, 2011, Stream TV Networks, Inc. ("Stream), and 3D Fusion, Inc. ("Fusion) and its founders Ilya Sorokin and Steve Blumenthal ("Fusion Founders"), (all parties collectively "Parties") desire to enter into a multi-party agreement as described herein ("Termination Agreement").

WHEREAS, Stream and Fusion had been each separately working in the area of 3D business related opportunities before they met each other and continued to develop their own respective 3D opportunities while exploring if a mutual opportunity may be possible to work together in the area of 3D;

WHEREAS, since meeting each other in the Summer of 2010, the Stream and Fusion entered into executed a confidentiality and non-disclosure agreement dated on or about June 9, 2010 and an addendum/amendment thereto on or about June 11, 2010 (collectively "NDAs") and eventually all the Parties entered into an Agreement on or about September 28, 2010 (individually "Term Sheet") that outlined prospective terms of both an investment and strategic relationship;

WHEREAS, Fusion has informally informed Stream that they have entered into a relationship with a third party whereby they have obtained capital to further their business ("3rd Party Understanding") and the Parties agree that the current events have changed the circumstances for an investment or strategic relationship in the manner previously identified and a termination of prior understanding should be established.

NOW THEREFORE, the Parties, intending to be legally bound hereby, agree as follows:

1. Respective Positions. Fusion and Fusion Founders assert they pursued and executed the 3rd Party Understanding as a necessity to develop their business opportunity and further assert they had little alternative options in their opinion. Stream and its principles assert that Fusion and Fusion Founders pursuit of and execution of the Third Party Understanding expressly violates the Section entitled "Duration Restrictions" on page 8-9 of the Term Sheet that provides in part, "…the Parties agree they **shall not shop for** or seek **any alternative** financing or capitalization except for that which is described herein…" (emphasis added).

2. Resolution. The Parties acknowledge and agree that the circumstances have changed whereby continuing efforts as outlined in the Term Sheet would be materially different and that Stream feels it has obligations to notify its employees, shareholders, representatives, advisors, prospective investors and the like of the changed circumstances and relationship of the Parties as a result of the Third Party Funding; however, the Parties have agreed they should terminate the prior obligations and legally clear any issues between them as a final resolution. The Parties agree that the Term Sheet by and between them is hereby formally terminated regardless of whether an earlier termination occurred by operation of law or fact but any continuing express obligations that may exist under the NDAs shall continue as provided in those documents.

3. Mutual Release. The Parties hereto, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound hereby, do, for themselves and their heirs, officers, employees, affiliates, agents, executors, administrators and assigns, fully release and forever discharge each other members of the Parties, their employees, insurers, agents, heirs, executors, representatives, successors and assigns from any and all causes of action, claims, obligations and demands of whatsoever kind on account of all known, and unknown injuries, losses and damages allegedly sustained by any of the Parties arising in any way to any oral or written discussion by each member of Parties including but not limited to Prior Agreements.

4. Choice of Law. As in all Prior Agreements, the Commonwealth of Pennsylvania and the county of Philadelphia shall be the exclusive choice of law and jurisdiction regardless of conflict of law principles and each Party expressly consents to such jurisdiction and venue and service therefore and hereby irrevocably agrees that all claims in respect of any such action or proceeding may be heard and determined in such courts.. However, the Parties agree they shall try to resolve any and all disputes amicably and directly in any conflict arises before litigation is pursued.

5. Miscellaneous. All Parties expressly acknowledge and warrant they had ample opportunity to seek any and all legal, financial or other advise before executing hereof and do so with full knowledge and understanding of the terms herein. The Parties also acknowledge this Termination Agreement shall be the sole understanding between them hereafter unless agree upon otherwise in writing. The parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the parties and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any of the provisions of this Agreement.

IN WITNESS WHEREOF, the Parties, by their duly authorized representatives, have executed this Agreement on the date first written above.

3D Fusion, Inc.	**Stream TV Networks, Inc.**
	Mathu Rajan
Ilya Sorokin CEO, 3D Fusion, Inc. <Seal.>	Mathu Rajan CEO, Stream TV Networks, Inc. <Seal>
	Mathu Rajan
Ilya Sorkin, individually	Mathu Rajan, Individually
Steve Blumenthal, individually	Raja Rajan, Individually

Exhibit H

US 20150249817A1

(19) **United States**
(12) **Patent Application Publication**
Roelen et al.

(10) **Pub. No.: US 2015/0249817 A1**
(43) **Pub. Date: Sep. 3, 2015**

(54) **DEPTH ADJUSTMENT OF AN IMAGE OVERLAY IN A 3D IMAGE**

(71) Applicant: **ULTRA-D COÖPERATIEF U.A.**, Eindhoven (NL)

(72) Inventors: **Waltherus Antonius Hendrikus Roelen**, Asten (NL); **Bart Gerard Bernard Barenbrug**, Waalre (NL)

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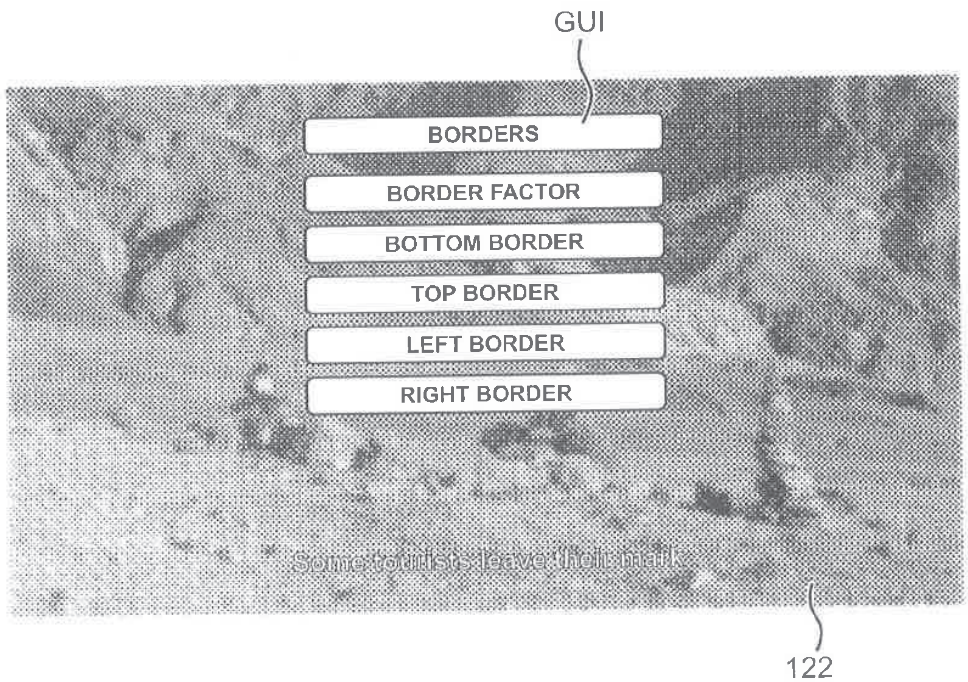
G06K 9/46 (2006.01)
G06T 7/00 (2006.01)

(52) **U.S. Cl.**

CPC ***H04N 13/0404*** (2013.01); ***G06T 7/0075*** (2013.01); ***G06T 15/20*** (2013.01); ***G06K 9/46*** (2013.01); *G06K 2009/4666* (2013.01)

(57) **ABSTRACT**

A system is provided for processing a 3D image signal. The 3D image signal comprises a 2D image signal and a 2D auxiliary signal, with the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display. The system comprises a user interface subsystem (**180**) for enabling a user to establish a user-defined 2D region (**182**) in the 2D image signal; a region definer (**140**) for defining a 2D region (**142**) in the 2D auxiliary signal, the 2D region corresponding to a display region on a display plane of the 3D display when 3D rendering the 2D image signal; and a depth processor (**160**) for i) obtaining a depth reduction parameter, the depth reduction parameter representing a desired amount of depth reduction in the display region when 3D rendering the 2D image signal, and ii) deriving an adjustment value from the depth reduction parameter. Accordingly, a depth reduction in the display region can be established, namely by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value. The system may be advantageously used to apply a depth reduction to hardcoded overlays in a 3D image signal.



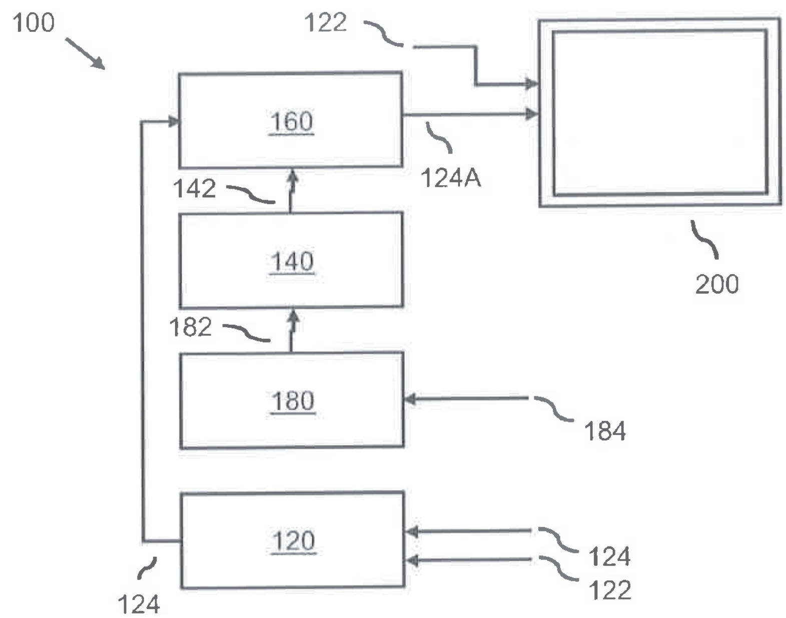


Fig. 1

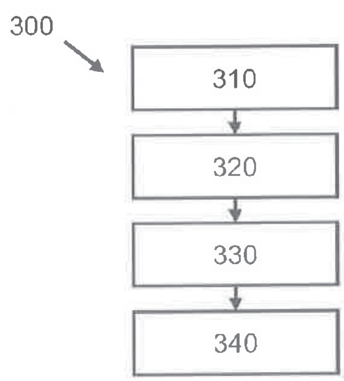


Fig. 2

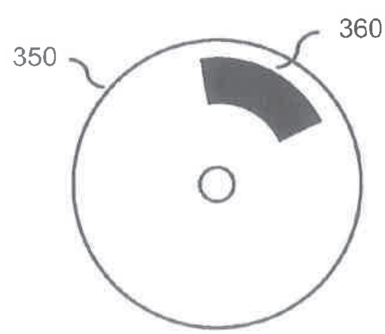


Fig. 3

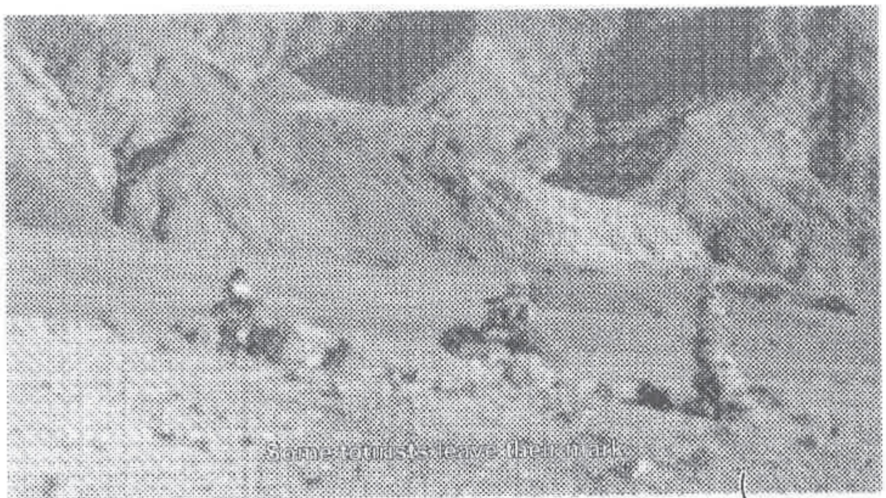


Fig. 4a 122

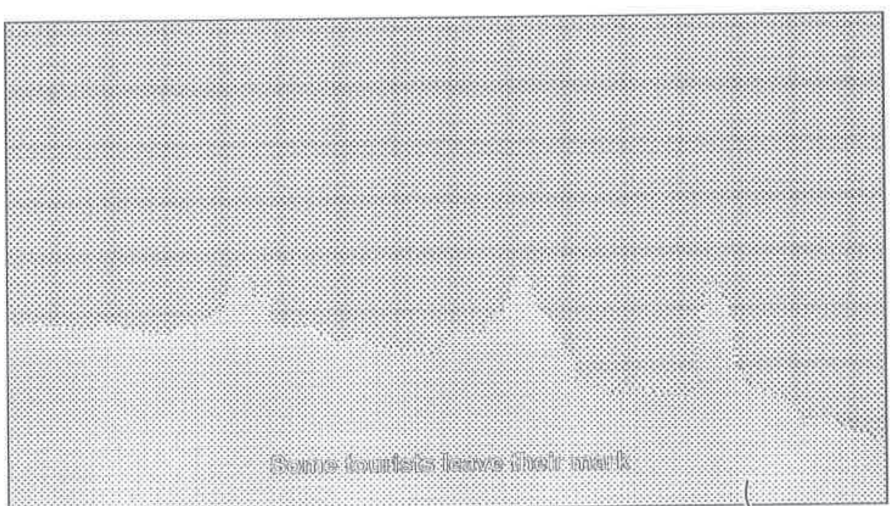


Fig. 4b 124

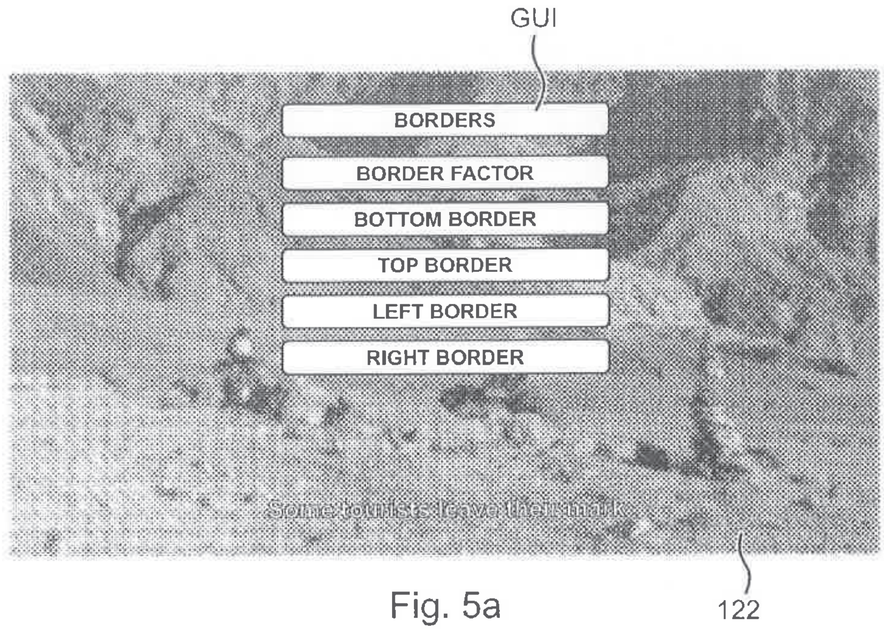

GUI
BORDERS
BORDER FACTOR
BOTTOM BORDER
TOP BORDER
LEFT BORDER
RIGHT BORDER
Some tourists leave their mark
122

Fig. 5a

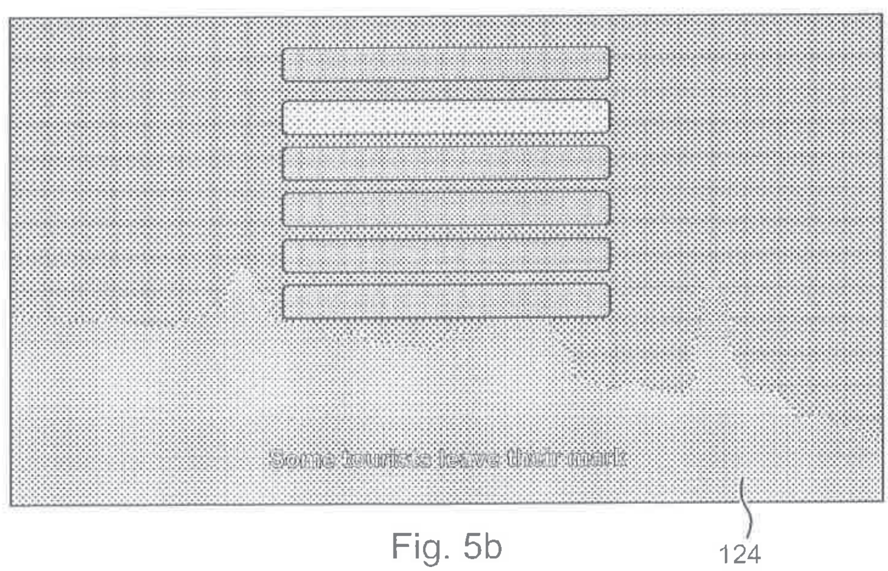

Some tourists leave their mark
124

Fig. 5b

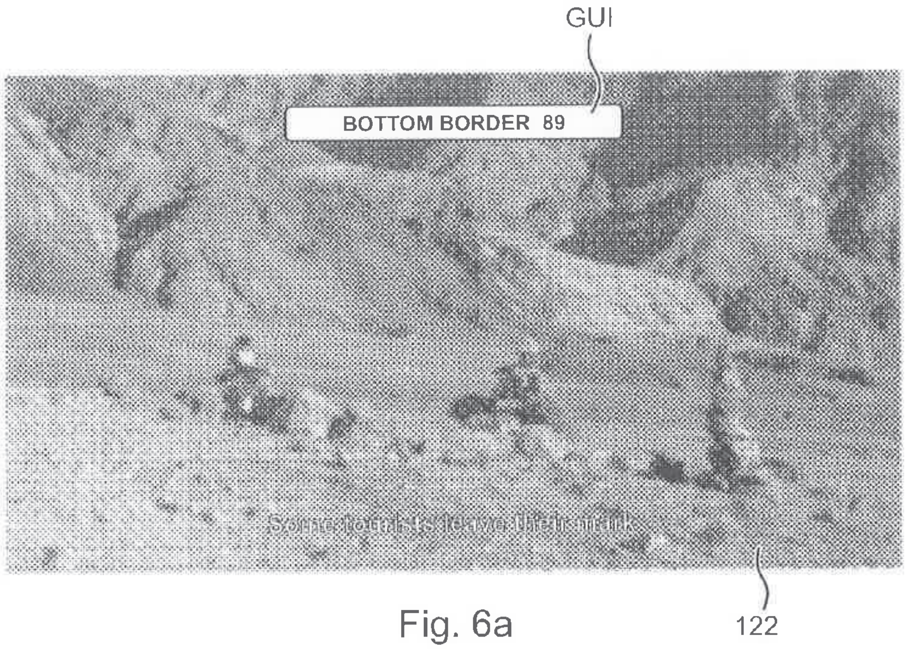

GUI
BOTTOM BORDER 89
Some tourists leave their mark
122

Fig. 6a

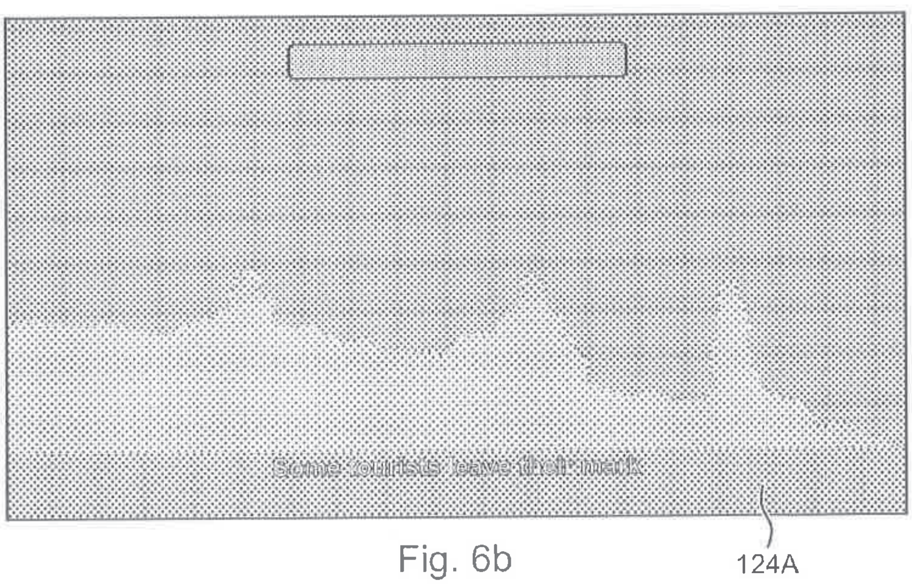

Some tourists leave their mark
124A

Fig. 6b

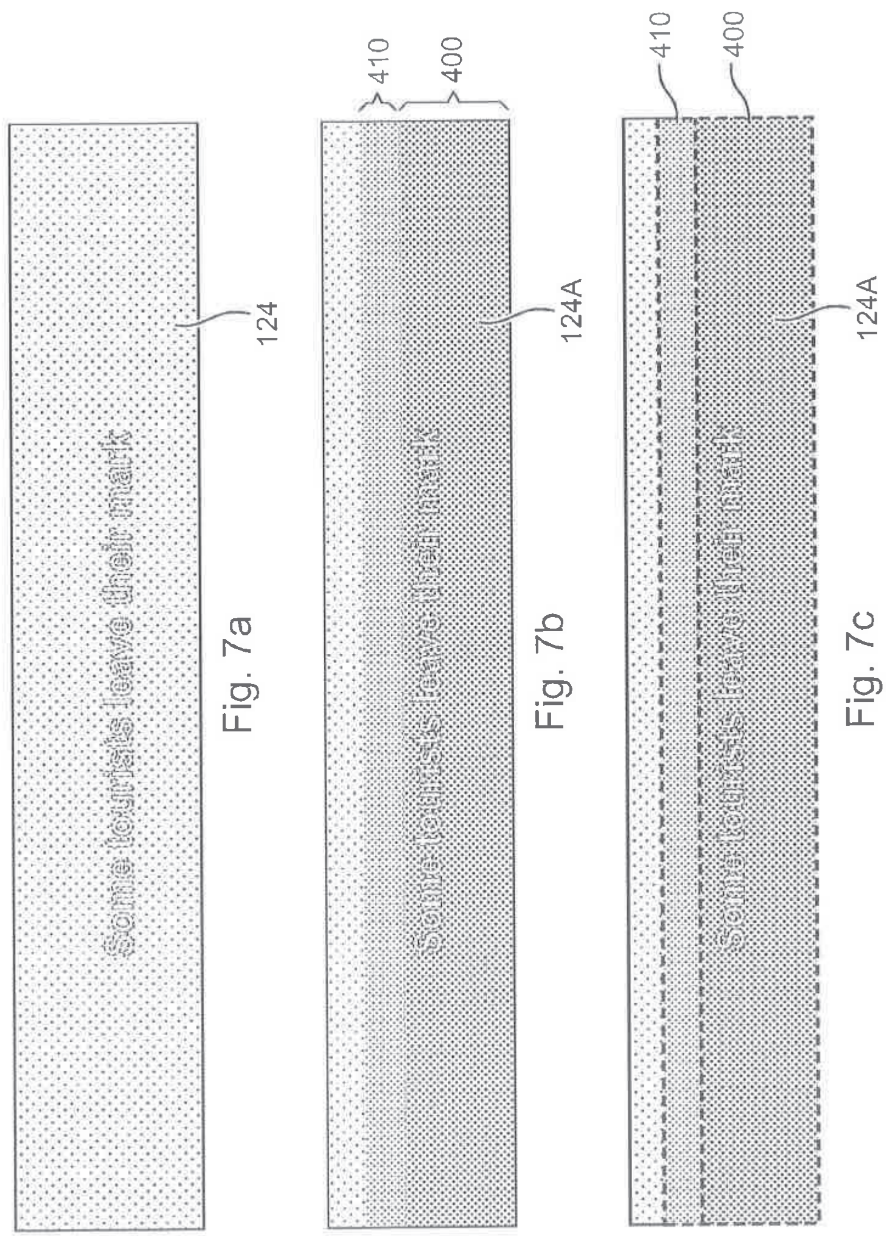


Fig. 7a

Fig. 7b

Fig. 7c

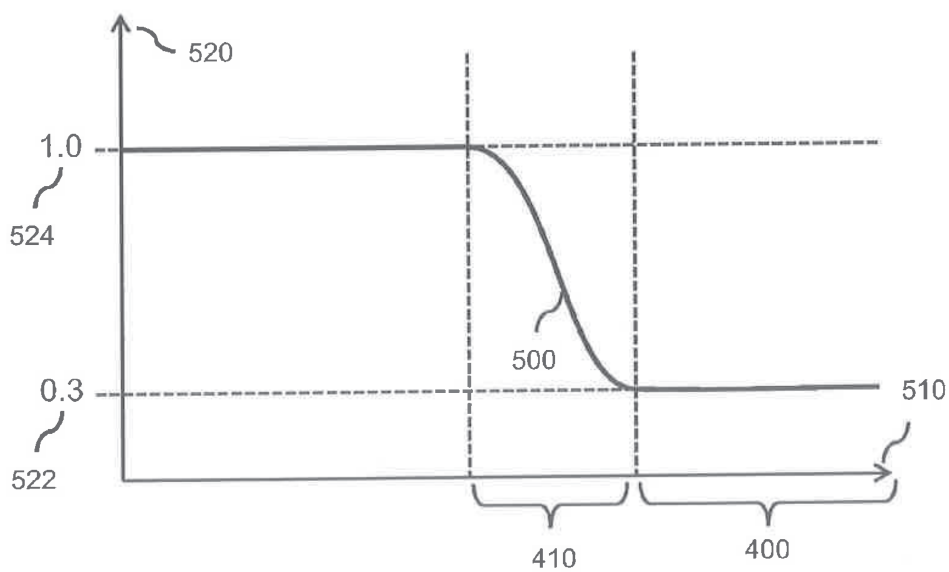


Fig. 8

DEPTH ADJUSTMENT OF AN IMAGE OVERLAY IN A 3D IMAGE

FIELD OF THE INVENTION

[0001] The invention relates to a system and method for processing a three-dimensional [3D] image signal, the 3D image signal comprising a two-dimensional [2D] image signal and a 2D auxiliary signal, the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display. The invention further relates to a 3D display device comprising the system.

BACKGROUND ART

[0002] Increasingly, display devices such as televisions, digital photo frames, tablets and smartphones comprise 3D displays to provide a user with a perception of depth when viewing content on such a device. For that purpose, such 3D display devices may, either by themselves or together with glasses worn by the user, provide the user with different images in each eye so as to provide the user with a perception of depth based on stereoscopy, i.e., a stereoscopic perception of depth.

[0003] 3D display devices typically use content which contains depth information in order to establish the content on screen as having a degree of depth. The depth information may be provided implicitly in the content. For example, in the case of so-termed stereo content, the depth information is provided by the differences between a left and a right image signal of the stereo content. Together, the left and right image signal thus constitute a stereo 3D image signal. The depth information may also be provided explicitly in the content. For example, in content encoded in the so-termed image+depth format, the depth information is provided by a 2D depth signal comprising depth values which are indicative of distances that objects within the 2D image signal have towards a camera or viewer. Instead of depth values, also disparity values may be used, i.e., the 2D depth signal may be a 2D disparity signal, or in general, a 2D depth-related signal. The 2D image signal and the 2D depth-related signal together constitute an alternative to the stereo 3D image signal.

[0004] Essentially, a 3D image signal thus comprises of at least one 2D image signal and one 2D auxiliary signal, the latter being, e.g., a 2D depth-related signal, or a further 2D image signal which together with the 2D image signal constitutes a stereo 3D image signal.

[0005] With respect to the 3D displays themselves: so-termed autostereoscopic displays provide said stereoscopic perception of depth without needing the viewer to wear polarized or shutter-based glasses. For that purpose, optical components are used, such as lenticular lens arrays (or in general lenticular or barrier means), which enable the display to emit a viewing cone from each given point on the 3D display, the viewing cone comprising at least a left view and a right view of a scene. This enables the viewer to see a different image with each eye when positioned accordingly within the viewing cone. Certain autostereoscopic displays, sometimes referred to as automultiscopic displays, provide multiple views of the same scene, rather than only a left and a right view. This allows the viewer to assume multiple positions in the viewing cone, i.e., move left-right in front of the display, while still obtaining a stereoscopic perception of the scene.

[0006] Examples of such autostereoscopic displays are described in a paper by C. van Berkel et al entitled "Multiview 3D-LCD" published in SPIE Proceedings Vol. 2653, 1996, pages 32 to 39 and in GB-A-2196166. In these examples the autostereoscopic display comprises a matrix LC (liquid crystal) display panel which has rows and columns of pixels (display elements) and which acts as a spatial light modulator to modulate light from a light source. The display panel can be of the kind used in other display applications, for example computer display screens for presenting display information in two dimensional form. A lenticular sheet, for example in the form of a molded or machined sheet of polymer material, overlies the output side of the display panel with its lenticular elements, comprising (semi) cylindrical lens elements, extending in the column direction with each lenticular element being associated with a respective group of two, or more, adjacent columns of display elements and extending in a plane that runs parallel with the display element columns. In an arrangement in which each lenticule is associated with two columns of display elements, the display panel is driven to display a composite image comprising two 2D sub-images vertically interleaved, with alternate columns of display elements displaying the two images, and the display elements in each column providing a vertical slice of the respective 2D (sub) image. The lenticular sheet directs these two slices, and corresponding slices from the display element columns associated with the other lenticules, to the left and right eyes respectively of a viewer in front of the sheet so that, with the sub-images having appropriate binocular disparity, the viewer perceives a single stereoscopic image. In other, multi-view, arrangements, in which each lenticule is associated with a group of more than two adjacent display elements in the row direction and corresponding columns of display elements in each group are arranged appropriately to provide a vertical slice from a respective 2-D (sub-) image, then as a viewer's head moves a series of successive, different, stereoscopic views are perceived for creating, for example, a look-around impression.

[0007] Autostereoscopic displays of above kind may be used for various applications, for example in home or portable entertainment, medical imaging and computer-aided design (CAD).

SUMMARY OF THE INVENTION

[0008] The inventors have recognized that when viewing content of a 3D image signal on a 3D display, any high-detail features in the content are best displayed at a display depth which not too far from the display plane, i.e., at a relatively neutral display depth. A reason for this is that crosstalk such as optical crosstalk may occur between the stereoscopic sub-images perceived by the user. Such crosstalk typically leads to so-termed ghosting. Ghosting in general is distracting for a viewer. Ghosting in high-detailed features in the content is especially distracting for the viewer. By displaying the high-detailed features at a relatively neutral display depth, such ghosting is reduced.

[0009] Examples of such high-detailed features are subtitles, broadcaster logos, or graphical user interface (GUI) elements, or in general anything involving small text which needs to displayed to the user in a readable form. In general, such high-detailed features are henceforth referred to as overlays due to the subtitles, logos, etc. typically being overlaid over another type of content.

[0010] When such overlays are delivered separately from the 2D image signal, e.g., as separate layers or streams within or next to the 3D image signal, the overlays may be displayed

at a depth which not too far from the display plane by assigning corresponding depth values to the overlays. Nevertheless, constraints have to be taken into account such that, e.g., subtitles are assigned a depth which places them in front of the content, i.e., nearer to the viewer, than the content underlying and surrounding the subtitles. The inventors have recognized that such depth assignment is much more difficult when the overlays have already been composited into the content, i.e., being hardcoded in the 3D image signal. Although it is possible to detect an overlay, e.g., using an overlay detection (also known as overlay segmentation) as known per se from the field of image analysis, such overlay detection is frequently imperfect. Hence, a detected overlay may not perfectly match the actual overlay in the 3D image signal. In particular, (sub)pixel-accurate overlay detection is difficult.

[0011] In principle, it is possible to already assign a relatively neutral display depth to overlays when generating the 3D image signal. For that purpose, a 2D-to-3D conversion may be used which inherently or by design attempts to assign said neutral display depth to the overlays. However, the inventors have recognized that depth estimation for small text like subtitles is difficult since they comprise separate thin structures. Consequently, it is difficult for a depth estimator to assign the same depth to such separate parts of the overlay. This can cause fluctuations (spatially and temporally) of the depth assigned to such overlays. These can be very distracting for a viewer.

[0012] It would be advantageous to provide a system and method which addresses the above concerns.

[0013] A first aspect of the invention provides a system for processing a three-dimensional [3D] image signal, the 3D image signal comprising a two-dimensional [2D] image signal and a 2D auxiliary signal, the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display, the system comprising:

[0014] a signal input for obtaining the 2D image signal and the 2D auxiliary signal;

[0015] a user interface subsystem for enabling a user to establish a user-defined 2D region in the 2D image signal;

[0016] a region definer for, based on the user-defined 2D region, defining a 2D region in the 2D auxiliary signal, the 2D region corresponding to a display region on a display plane of the 3D display when 3D rendering the 2D image signal using the 2D auxiliary signal;

[0017] a depth processor for i) obtaining a depth reduction parameter, the depth reduction parameter representing a desired amount of depth reduction in the display region towards a neutral display depth when 3D rendering the 2D image signal on the 3D display, and ii) deriving an adjustment value from the depth reduction parameter for enabling establishing the depth reduction in the display region by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value.

[0018] A further aspect of the invention provides a 3D display device comprising the system set forth.

[0019] A further aspect of the invention provides a method for processing a three-dimensional [3D] image signal, the 3D image signal comprising a two-dimensional [2D] image signal and a 2D auxiliary signal, the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display, the method comprising:

[0020] obtaining the 2D image signal and the 2D auxiliary signal;

[0021] enabling a user to establish a user-defined 2D region in the 2D image signal;

[0022] based on the user-defined 2D region, defining a 2D region in the 2D auxiliary signal, the 2D region corresponding to a display region on a display plane of the 3D display when 3D rendering the 2D image signal using the 2D auxiliary signal;

[0023] obtaining a depth reduction parameter, the depth reduction parameter representing a desired amount of depth reduction in the display region towards a neutral display depth when 3D rendering the 2D image signal on the 3D display; and

[0024] deriving an adjustment value from the depth reduction parameter for enabling establishing the depth reduction in the display region by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value.

[0025] A further aspect of the invention provides a computer program product comprising instructions for causing a processor system to perform the method set forth.

[0026] The above measures provide a user interface subsystem for enabling a user to define a user-defined 2D region in the 2D image signal. For example, the user may define the user-defined 2D region using a graphical user interface (GUI) to define a top side, bottom side, left side, and right side of a rectangular user-defined 2D region, or select the user-defined 2D region amongst a plurality of pre-determined 2D regions, etc. Based on the user-defined 2D region, a 2D region in the 2D auxiliary signal is defined. The 2D region corresponds to a display region on a display plane of the 3D display when 3D rendering the 2D image signal using the 2D auxiliary signal. A depth reduction parameter is obtained for the display region, with the depth reduction parameter representing a desired amount of depth reduction in the display region. Here, the term depth reduction refers to a reduction towards a neutral display depth when 3D rendering the 2D image signal on the 3D display. To enable the depth reduction to be established, an adjustment value is derived from the depth reduction parameter. Accordingly, the depth reduction in the display region can be established, namely by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value.

[0027] The above measures have the effect that a 2D region is defined and an adjustment value is provided, which together enable establishing the depth reduction in the display region by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value. This has the advantageous effect that when the 3D image signal comprises hard-coded overlays, the user is enabled to define the user-defined 2D region to include the hard-coded overlays, thereby causing the system to provide an adjustment value for a corresponding 2D region in the auxiliary signal, with the adjustment value enabling the depth of the hard-coded overlays in the display region to be reduced towards a neutral display depth. Accordingly, in case a depth estimator has assigned an erroneous depth to the hard-coded overlay, the erroneous depth can be reduced, thereby also reducing depth fluctuations typically associated with such an erroneous depth. Advantageously, it is not needed to rely on an (automatic) overlay detection which is frequently imperfect for the earlier mentioned reasons. Rather, the user is enabled to define the user-defined 2D region him/herself, i.e., manually.

[0028] It is noted that US 2011/0316991 A1 describes a stereoscopic display device including: a parallax adjustment section performing a parallax adjustment on each of a left-eye image and a right-eye image which are inputted: and a display section displaying the left-eye image and the right-eye image which are resultant of the parallax adjustment by the parallax adjustment section. The parallax adjustment section performs the parallax adjustment only on a region other than an OSD image region with an OSD image superposed therein in each of the left-eye image and the right-eye image. US 2011/0316991 A1 thus excludes the OSD image from parallax control. However, US 2011/0316991 does not disclose enabling a user to establish a user-defined 2D region so as to establish a depth reduction in a display region on the 3D display. Rather, US 2011/0316991 selects a fixed region, namely that of the OSD image, from which parallax control is to be excluded and a complementary region, namely the rest of the image, to which parallax control is to be applied. In fact, in US 2011/0316991, the OSD image is explicitly available to the system. Accordingly, US 2011/0316991 does not offer a solution for dealing with hardcoded overlays in a 3D image signal.

[0029] EP 2451176 A2 describes video communication method of a 3D video communication, which is said to include acquiring a plurality of 2D images corresponding to a talker using a 3D camera, adjusting a point of convergence of the plurality of 2D images using a preset feature point of the talker, detecting an object located between the talker and the 3D camera using the acquired plurality of 2D images, scaling an original sense of depth of the detected object to a new sense of depth, and generating a 3D talker image including the object with the new sense of depth and transmitting the 3D talker image to a 3D video communication apparatus of a listener. EP 2451176 A2, however, does not disclose enabling a user to establish a user-defined 2D region so as to establish a depth reduction in a display region on the 3D display. Rather, in EP 2451176, the object is detected automatically using an object detecting unit **135** [0077]. In fact, EP 2451176 makes use of the depth of the object to detect the object, i.e., the object is effectively located in 3D [0077-0082], and thereby relies on the distance having been correctly obtained by the 3D camera. It will be appreciated that this does not provide a solution for dealing with hardcoded overlays in a 3D image signal to which a depth estimator may have assigned an erroneous depth.

[0030] US 2012/0162199 A1 describes an apparatus and a method for displaying a 3D augmented reality. It is said that if the augmented reality is implemented as a 3D image, some of the 3D augmented information may be degraded in terms of information delivery efficiency. It is further said that the 3D effects may be selectively removed from a selected object of a 3D augmented reality image by providing an object area detecting unit to detect a first object area of a left image frame of a 3D image and a second object area of a right image frame of the 3D image based on a selected object of the 3D image, and a frame adjusting unit to adjust the left image frame and the right image frame to change a 3D effect of the selected object. However, in US 2012/0162199, the objects are known per se, i.e., defined by object information [see 0036, 0048], thereby enabling the apparatus to know which object is selected by the user, or even enabling the object to be automatically selected [see 0059]. Accordingly, instead of enabling a user to establish a user-defined 2D region so as to establish a depth reduction in a display region on the 3D display, US 2012/0162199 enables the user to directly select an object via the object information. US 2012/0162199 thus addresses the problem of how to remove a three-dimensional effect of an object defined by object information, and does not offer a solution when dealing with hardcoded overlays in a 3D image signal, i.e., for which such object information is not available.

[0031] The following describes optional aspects of the present invention.

[0032] Optionally, the region definer comprises an overlay detector for detecting an overlay in the 3D image signal, and the user interface subsystem is arranged for enabling the user to establish the user-defined 2D region based on the detected overlay. Although it has been recognized that an overlay detector may fail at perfectly detecting hardcoded overlays in a 3D image signal, a detected overlay may nevertheless be used as a basis for the user in defining the user-defined 2D region. For example, the detected overlay may guide the user towards the location of the hardcoded overlay, thereby enabling the user to quickly and conveniently define the user-defined 2D region. Another example is that, at times, the detected overlay may be sufficiently well detected, thereby enabling the user to define the user-defined 2D region directly based on the detected overlay.

[0033] Optionally, the user interface subsystem is arranged for using the detected overlay to:

[0034] initialize the user-defined 2D region; and/or

[0035] establish a grid for providing the user with snap-to-grid functionality when establishing the user-defined 2D region.

[0036] Optionally, the user interface subsystem is arranged for enabling the user to specify the desired amount of depth reduction in the display region, thereby establishing the depth reduction parameter.

[0037] Optionally, the signal input is arranged for obtaining metadata indicative of a pre-defined 2D region, and the region definer is arranged for defining the 2D region based on the pre-defined 2D region.

[0038] Optionally, the depth processor is arranged for deriving an offset value from the depth reduction parameter to enable adjusting the signal values of the 2D auxiliary signal within the 2D region by applying said offset value to the signal values.

[0039] Optionally, the 2D auxiliary signal is a 2D depth-related signal, and the depth processor is arranged for deriving a gain value from the depth reduction parameter to enable adjusting the signal values of the 2D depth-related signal within the 2D region by applying the gain value to the signal values.

[0040] Optionally, the depth processor is arranged for adjusting the signal values of the 2D auxiliary signal within the 2D region based on the adjustment value so as to establish the depth reduction in the display region.

[0041] Optionally, the depth processor is arranged for adjusting the signal values of the 2D auxiliary signal within the 2D region based alpha-blending the signal values with a neutral depth value.

[0042] Optionally, the depth processor is arranged for establishing a gradual transition between the adjusted signal values within the 2D region and non-adjusted signal values outside the 2D region.

[0043] Optionally, the gradual transition is a substantially first-order linear transition or second-order non-linear transition.

[0044] Optionally, the system further comprises an image processor for:

[0045] establishing a 2D image region in the 2D image signal which corresponds to the 2D region in the 2D auxiliary signal; and

[0046] applying an image enhancement technique to image values of the 2D image signal within the 2D image region.

[0047] Optionally, the image enhancement technique is at least one of the group of: a contrast enhancement, a sharpness adjustment, and a temporal filtering.

BRIEF DESCRIPTION OF THE DRAWINGS

[0048] These and other aspects of the invention are apparent from and will be elucidated with reference to the embodiments described hereinafter. In the drawings,

[0049] FIG. **1** shows a system for processing a 3D image signal;

[0050] FIG. **2** shows a method for processing a 3D image signal;

[0051] FIG. **3** shows a computer program product for performing the method;

[0052] FIG. **4***a* shows a 2D image signal comprising subtitles;

[0053] FIG. **4***b* shows a 2D depth signal corresponding to the 2D image signal;

[0054] FIG. **5***a* shows a GUI for enabling a user to establish a user-defined 2D region;

[0055] FIG. **5***b* shows the 2D depth signal reflecting the GUI;

[0056] FIG. **6***a* shows the user establishing the user-defined 2D region using the GUI;

[0057] FIG. **6***b* shows the region definer establishing the user-defined 2D region as the 2D region, and the depth processor establishing the depth reduction in the display region;

[0058] FIG. **7***a* shows a close-up view of the 2D depth signal without depth reduction;

[0059] FIG. **7***b* shows a close-up view of the 2D depth signal with depth reduction;

[0060] FIG. **7***c* illustrates the display region and a transition region; and

[0061] FIG. **8** shows a gain value varying as a function of vertical position on screen.

[0062] It should be noted that items which have the same reference numbers in different Figures, have the same structural features and the same functions, or are the same signals. Where the function and/or structure of such an item has been explained, there is no necessity for repeated explanation thereof in the detailed description.

DESCRIPTION OF THE INVENTION

[0063] FIG. **1** shows a system **100** for processing a three-dimensional [3D] image signal, the 3D image signal comprising a two-dimensional [2D] image signal and a 2D auxiliary signal, the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display **200**. The 2D auxiliary signal may be, e.g., a 2D disparity signal, a 2D depth signal or another 2D image signal. When combining the 2D auxiliary signal with the 2D image signal, a 3D rendering of the 2D image signal is made possible on a 3D display. The 3D rendering may involve performing view rendering, e.g., to generate another 2D image signal from the 2D image signal and a 2D depth-related signal. The 3D rendering may also involve processing two 2D image signals for enabling stereoscopic viewing.

[0064] The system **100** comprises a signal input **120** for obtaining the 2D image signal **122** and the 2D auxiliary signal **122**. The system **100** further comprises a region definer **140** for defining a 2D region **142** in the 2D auxiliary signal, the 2D region corresponding to a display region on a display plane of the 3D display when 3D rendering the 2D image signal. The 2D region thus has a shape and a position. The 2D region may be constituted by region parameters describing an outline of the 2D region. The region parameters may be position parameters. The 2D region corresponds to a display region on a display plane of the 3D display when 3D rendering the 2D image signal. In other words, in a display region on the display plane of the 3D display, the depth as perceived by the user is established by the signal values of the 2D auxiliary signal within the 2D region. The display region is a region on the display plane in that it extends in width and in height on the display plane. The term display plane refers to the plane coinciding with the main light emitting surface of the 3D display and having a substantially same depth, i.e., corresponding to that of the main light emitting surface.

[0065] The system **100** further comprises a depth processor **160** for obtaining a depth reduction parameter **162**, the depth reduction parameter representing a desired amount of depth reduction in the display region when 3D rendering the 2D image signal. The depth reduction parameter may be obtained internally, e.g., by being established by another part of the system or by being pre-set. The depth reduction parameter may also be obtained externally, e.g., from a user, as will be discussed further onward. The depth reduction parameter represents a desired amount of depth reduction in the display region when 3D rendering the 2D image signal. Here, the adjective desired refers to the depth reduction parameter having established in order to effect said depth reduction. The term depth reduction refers to depth within the display region being nearer to a neutral display depth, i.e., resulting in the content being established less protruding from, or caving into the 3D display.

[0066] The depth processor **160** is arranged for deriving an adjustment value from the depth reduction parameter for enabling establishing the depth reduction in the display region by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value. Thus, the adjustment parameter is arranged for, when adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value, establishing the depth reduction in the display region. Consequently, the depth reduction is effected after said adjusting of the signal values.

[0067] It is noted that the depth processor **160** may be arranged for actually adjusting the signal values of the 2D auxiliary signal within the 2D region based on the adjustment value. This is in fact shown in FIG. **1**, where the depth processor **160** obtains the 2D auxiliary signal **124** from the input **120** and establishes an adjusted 2D auxiliary signal **124**A. The adjusted 2D auxiliary signal **124**A is shown to be provided to the 3D display **200**. Although not shown in FIG. **1**, the system **100** may further provide the 2D image signal **122** to the 3D display **200**. Alternatively, the 3D display **200** may receive the 2D image signal **122** from elsewhere, e.g., a different system or device.

[0068] Although not shown in FIG. **1**, the display processor **160** may also refrain from actually adjusting the signal values

of the 2D auxiliary signal within the 2D region based on the adjustment value. In this case, the depth processor **160** may provide the adjustment value for use by another depth processor. The other display processor may be comprised in another device such as the 3D display **200**. For example, the other display processor may be a view renderer of the 3D display **200**. View renderers are known per se from the field of 3D image processing. In addition, the region definer and/or the depth processor **160** may provide the 2D region to the other depth processor. For example, the system **100** may be constituted by a set-top device, and the depth processor **160** of the set-top device may provide the adjustment value to the 3D display **200** which then adjusts the signal values of the 2D auxiliary signal within the 2D region. The adjustment may be effected in the 3D display **200** by altering rendering parameters of the view renderer based on the adjustment value, or by using the adjustment value directly as a rendering parameter. It is noted that in this case, the system **100** may not need to receive the 2D image signal **122**. Moreover, the system **100** may not need to receive the 2D auxiliary signal **124** as well and may thus not need to comprise the input **120**. In general, it is noted that the depth processor **160** may also constitute a depth processing subsystem **160** which extends over multiple devices, e.g., over a set-top device and a 3D display **200**.

[0069] FIG. **2** shows a method **300** for processing a three-dimensional [3D] image signal, the 3D image signal comprising a two-dimensional [2D] image signal and a 2D auxiliary signal, the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display. The method **300** comprises, in a first step, obtaining **310** the 2D image signal and the 2D auxiliary signal. The method **300** further comprises, in a second step, defining **320** a 2D region in the 2D auxiliary signal, the 2D region corresponding to a display region on a display plane of the 3D display when 3D rendering the 2D image signal. The method **300** further comprises, in a third step, obtaining **330** a depth reduction parameter, the depth reduction parameter representing a desired amount of depth reduction in the display region when 3D rendering the 2D image signal. The method **300** further comprises, in a fourth step, deriving **340** an adjustment value from the depth reduction parameter for enabling establishing the depth reduction in the display region by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value. The method **300** may correspond to an operation of the system **100**. However, the method **300** may also be performed in separation of the system **100**.

[0070] FIG. **3** shows a computer readable medium **350** comprising a computer program product **260** for causing a processor system to perform the method of FIG. **2**. For that purpose, the computer program product **360** comprises instructions for the processor system, which, upon execution, cause the processor system to perform the method. The computer program product **360** may be comprised on the computer readable medium **350** as a series of machine readable physical marks and/or as a series of elements having different electrical, e.g., magnetic, or optical properties or values.

[0071] The system **100** may further comprise a user interface subsystem **180** for enabling a user to establish a user-defined 2D region **182**. For that purpose, the user interface subsystem **180** may be arranged for establishing a Graphical User Interface (GUI) on the 3D display **200** so as to enable the user to establish the user-defined 2D region **182** using the GUI. For example, the GUI may enable the user to define a vertical position on screen below which the depth is reduced. Effectively, the region below the vertical position constitutes the user-defined 2D region **182**. The GUI may also enable the user to define a top side, bottom side, left side, and right side of a rectangular user-defined 2D region **182** using, e.g., position sliders corresponding to respective positions of the respective sides. FIG. **5***a* shows an example of such a GUI. It is noted that various alternatives means for establishing the user-defined 2D region **182** may be advantageously used. For example, the user may select the user-defined 2D region **182** amongst a plurality of pre-determined 2D regions. Moreover, instead of using a GUI, other means may be used, e.g., button presses, voice control, etc.

[0072] The region definer **140** may be arranged for defining the 2D region **142** based on the user-defined 2D region **182**. For example, the region definer **140** may define the 2D region **142** to be equal to the user-defined 2D region **182**. Hence, the user may have full control over the 2D region, and he/she can define the 2D region by establishing the user-defined 2D region **182**. Alternatively, the region definer **140** may define the 2D region **142** based on the user-defined 2D region **182** by, e.g., initializing the 2D region with the user-defined 2D region **182**, or using the user-defined 2D region **182** in any other suitable manner to define the 2D region **142**. Essentially, the 2D region **142** thus constitutes a user configurable depth-reduced area within the 3D image signal.

[0073] Alternatively or additionally, the region definer **140** may comprise an overlay detector for detecting an overlay in the 3D image signal **122**, **124**, and the user interface subsystem **180** may be arranged for enabling the user to establish the user-defined 2D region **182** based on the detected overlay. For example, the user may be shown the detected overlay, i.e., in the form of an outline or position indicators, thereby enabling the user to base his/her establishing of the user-defined 2D region **182** on the detected overlay. The user interface subsystem **180** may also use the detected overlay to initialize the user-defined 2D region **182**. Consequently, the detected overlay may provide an initial 2D region, and the user may adjust the initial 2D region so as to establish the user-defined 2D region **182**. Alternatively or additionally, the user interface subsystem **180** may establish a grid for providing the user with snap-to-grid functionality when establishing the user-defined 2D region **182**. Hence, the user may be guided towards establishing the user-defined 2D region **182**.

[0074] Alternatively or additionally, the user interface subsystem **180** may be arranged for enabling the user to specify the desired amount of depth reduction in the display region, thereby establishing the depth reduction parameter **162**. For example, the user may adjust a depth reduction slider. It is noted that instead of the user establishing the depth reduction parameter **162**, the depth reduction parameter **162** may also be pre-set or by determined by the system **100**. For example, the depth reduction parameter **162** may depend on an overall amount of depth in the 3D image signal.

[0075] The signal input **120** may be arranged for obtaining metadata indicative of a pre-defined 2D region, and the region definer **140** may be arranged for defining the 2D region based on the pre-defined 2D region. The pre-defined 2D region may be provided by earlier or previous system or device in the signal transmission chain. It is noted that the system **100** may, in turn, be arranged for providing the 2D region as defined by the region definer **140** and/or the adjustment value to a later or next system or device in the signal transmission chain, e.g., in the form of further metadata.

[0076] The depth processor **160** may be arranged for deriving an offset value from the depth reduction parameter **162** to enable adjusting the signal values of the 2D auxiliary signal **124** within the 2D region by applying said offset value to the signal values. The offset may be a depth-related offset in case the 2D auxiliary signal **124** is a 2D depth-related signal. As such, the offset value may be added and/or subtracted from depth-related signals of the 2D depth-related signal within the 2D region. The offset may also be a disparity offset in case the 2D auxiliary signal **124** is another 2D image signal. The disparity offset may be used to horizontally displace image values of the 2D auxiliary signal **124** in the 2D region. In case the 2D auxiliary signal **124** is a 2D depth-related signal, the depth processor **160** may also be arranged for deriving a gain value from the depth reduction parameter **162** to enable adjusting the depth-related values of the 2D depth-related signal within the 2D region by applying the gain value to the depth-related values. As such, the gain value may be multiplied with depth-related signals of the 2D depth-related signal within the 2D region. The depth processor **160** may be arranged for deriving both a gain value and an offset value from the depth reduction parameter **162**. The offset may be first applied, and then the gain, or vice versa.

[0077] In case the depth processor **160** is arranged for adjusting the signal values of the 2D auxiliary signal within the 2D region based on the adjustment value, the depth processor **160** may perform said adjusting based on an alpha-blending the signal values with a neutral depth value. The alpha-value in the alpha-blending may be derived from the depth reduction parameter **162**. It is noted that alpha-blending is known per se from the field of image processing. Furthermore, the depth processor **160** may be arranged for establishing a gradual transition between the adjusted signal values within the 2D region and non-adjusted signal values outside the 2D region. Hence, a transition region is established surrounding the 2D region in which the gradual transition is effected. Advantageously, a perception of breakup is avoided or reduced which would otherwise occur if an object extends both into the 2D region as well as outside of said region. The gradual transition may be a substantially first-order linear transition or second-order non-linear transition.

[0078] Although not shown in FIG. **1**, the system **100** may further comprise an image processor **180** for i) establishing a 2D image region in the 2D image signal **122** which corresponds to the 2D region in the 2D auxiliary signal **124**, and ii) applying an image enhancement technique to image values of the 2D image signal within the 2D image region. The image enhancement technique may be one or more of: a contrast enhancement, a sharpness adjustment, and a temporal filtering. Advantageously, a readability of the overlay, especially a text-based overlay, is further improved.

[0079] It is noted that the term image signal refers to a signal representing at least one image. The image signal may also represent multiple images, e.g., a sequence of images such as a video sequence. Effectively, each image signal may thus constitute a video signal.

[0080] The operation of the system **100** and the method **300** may be further explained in reference to FIG. **4***a* onward. FIG. **4***a* shows a 2D image signal **122** comprising subtitles of the text "Some tourists leave their mark". The subtitles constitute a hardcoded overlay, i.e., are part of the 2D image signal **122**. FIG. **4***b* shows a 2D depth signal **124** corresponding to the 2D image signal. Here, an intensity is inversely proportionate to a distance to the viewer, i.e., a higher intensity corresponds to being closer to the viewer, and a lower intensity corresponds to being further away from the viewer. In this example, a lower intensity, i.e., darker, corresponds to a depth behind the display plane and a higher intensity, i.e., brighter, corresponds to a depth in front of the display plane.

[0081] FIG. **5***a* shows an example of the user interface subsystem **180** establishing a GUI on screen for enabling the user to establish a user-defined 2D region. The GUI comprises a slider termed "Border factor" which enables the user to specify the desired amount of depth reduction in the display region. The GUI further comprises four sliders enabling the user to establish multiple user-defined 2D regions, i.e., one at every side of the 2D image signal **122**. If all four user-defined 2D regions are established by the user with a non-zero size, said regions together have a shape of a window frame and thus effectively constitute a single user-defined 2D region. It is noted that many alternatives are conceivable for enabling the user to establish the user-defined 2D region(s). By operating the sliders suitable, the user can thus establish the user-defined 2D region. FIG. **5***b* shows the 2D depth signal reflecting the GUI, i.e., showing that the GUI is also established at a depth.

[0082] FIG. **6***a* shows the user completing the adjustments of the slider by establishing a user-defined 2D region at the bottom of the screen, i.e., comprising in this particular example all 89 image lines from the bottom of the 2D image signal **122**. FIG. **6***b* shows a result of the region definer **140** establishing the user-defined 2D region as the 2D region, and the depth processor **160** establishing the depth reduction in the display region. It can be seen that depth values of the 2D depth signal within the 2D region are adjusted, thereby providing the subtitles with a depth that results the subtitles having a larger distance to the viewer, i.e., having a reduced depth. FIG. **7***a* shows a close-up view of the 2D depth signal **122** without depth reduction. FIG. **7***b* shows a close-up view of the 2D depth signal with depth reduction, i.e., the adjusted 2D depth signal **124**. The extent of the 2D region **400** is indicated here. Moreover, a transition region **410** can be seen. Here, a result is shown of the depth processor **160** establishing a gradual transition between the adjusted signal values within the 2D region **400** and non-adjusted signal values outside the 2D region, yielding said transition region **410**. FIG. **7***c* illustrates the display region and a transition region using dashed rectangles.

[0083] The adjusted 2D depth signal **124***a* of FIGS. **6***b*, **7***b* and **7***c* may be obtained by applying a gain value to the 2D depth signal **122** which varies as a function of vertical position. FIG. **8** shows an example of such a varying gain value. Here, a graph is shown representing along its horizontal axis **510** a vertical position, i.e., y-position, on the display and along its vertical axis **520** a gain value. The graph shows a gradual varying of the gain value as function of the y-position, i.e., a gain value function **500** which varies from a first gain value **524** of, e.g., 0.3 within the 2D region **400** to a second gain value **524** of 1.0 outside of the 2D region, with the gain value slowly transitioning from 0.3 to 1.0 in the transition region **410**. The gain value may be applied by first subtracting an offset from the 2D depth signal **122**. The offset may correspond to a neutral depth value, e.g., one that corresponds to a neutral display depth. After applying the gain value, the offset may again be added to the 2D depth signal **122**. All of the depth values of the 2D depth signal **122** may be multiplied by the gain value. Alternatively, only the depth values in the

2D region **400** and the transition region **410** may be multiplied with the gain value. It is noted that another term for gain value is gain factor.

[0084] It will be appreciated that, in accordance with the present invention, a system may be provided for processing a 3D image signal, the 3D image signal comprising a two-dimensional 2D image signal and a 2D auxiliary signal, the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display, the system comprising:

[0085] a signal input for obtaining the 2D image signal and the 2D auxiliary signal;

[0086] a region definer for defining a 2D region in the 2D auxiliary signal, the 2D region corresponding to a display region on a display plane of the 3D display when 3D rendering the 2D image signal;

[0087] a depth processor for i) obtaining a depth reduction parameter, the depth reduction parameter representing a desired amount of depth reduction in the display region when 3D rendering the 2D image signal, and ii) deriving an adjustment value from the depth reduction parameter for enabling establishing the depth reduction in the display region by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value.

[0088] It should be noted that the above-mentioned embodiments illustrate rather than limit the invention, and that those skilled in the art will be able to design many alternative embodiments.

[0089] In the claims, any reference signs placed between parentheses shall not be construed as limiting the claim. Use of the verb "comprise" and its conjugations does not exclude the presence of elements or steps other than those stated in a claim. The article "a" or "an" preceding an element does not exclude the presence of a plurality of such elements. The invention may be implemented by means of hardware comprising several distinct elements, and by means of a suitably programmed computer. In the device claim enumerating several means, several of these means may be embodied by one and the same item of hardware. The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measures cannot be used to advantage.

1. A system (**100**) for processing a three-dimensional [3D] image signal, the 3D image signal comprising a two-dimensional [2D] image signal and a 2D auxiliary signal, the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display (**200**), the system comprising:

a signal input (**120**) for obtaining the 2D image signal (**122**) and the 2D auxiliary signal (**122**);

a user interface subsystem (**180**) for enabling a user to establish a user-defined 2D region (**182**) in the 2D image signal;

a region definer (**140**) for, based on the user-defined 2D region, defining a 2D region (**142**) in the 2D auxiliary signal, the 2D region corresponding to a display region on a display plane of the 3D display when 3D rendering the 2D image signal using the 2D auxiliary signal: and

a depth processor (**160**) for:

i) obtaining a depth reduction parameter (**162**), the depth reduction parameter representing a desired amount of depth reduction in the display region towards a neutral display depth when 3D rendering the 2D image signal on the 3D display, and

ii) deriving an adjustment value from the depth reduction parameter for enabling establishing the depth reduction in the display region by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value.

2. The system (**100**) according to claim **1**, wherein:

the region definer (**140**) comprises an overlay detector for detecting an overlay in the 3D image signal (**122**, **124**); and

the user interface subsystem (**180**) is arranged for enabling the user to establish the user-defined 2D region (**182**) based on the detected overlay.

3. The system (**100**) according to claim **2**, wherein the user interface subsystem (**180**) is arranged for using the detected overlay to:

initialize the user-defined 2D region; and/or

establish a grid for providing the user with snap-to-grid functionality when establishing the user-defined 2D region.

4. The system (**100**) according to any one of claims **1-3**, wherein the user interface subsystem (**180**) is arranged for enabling the user to specify the desired amount of depth reduction in the display region, thereby establishing the depth reduction parameter (**162**).

5. The system (**100**) according to any one of the above claims, wherein the signal input (**120**) is arranged for obtaining metadata indicative of a pre-defined 2D region, and wherein the region definer (**140**) is arranged for defining the 2D region based on the pre-defined 2D region.

6. The system (**100**) according to any one of the above claims, wherein the depth processor (**160**) is arranged for deriving an offset value from the depth reduction parameter (**162**) to enable adjusting the signal values of the 2D auxiliary signal (**124**) within the 2D region by applying said offset value to the signal values.

7. The system (**100**) according to any one of the above claims, wherein the 2D auxiliary signal (**124**) is a 2D depth-related signal, and wherein the depth processor (**160**) is arranged for deriving a gain value from the depth reduction parameter (**162**) to enable adjusting the signal values of the 2D depth-related signal within the 2D region by applying the gain value to the signal values.

8. The system (**100**) according to any one of the above claims, wherein the depth processor (**160**) is arranged for adjusting the signal values of the 2D auxiliary signal within the 2D region based on the adjustment value so as to establish the depth reduction in the display region.

9. The system (**100**) according to claim **8**, wherein the depth processor (**160**) is arranged for adjusting the signal values of the 2D auxiliary signal within the 2D region based alpha-blending the signal values with a neutral depth value.

10. The system (**100**) according to claim **8** or **9**, wherein the depth processor (**160**) is arranged for establishing a gradual transition between the adjusted signal values within the 2D region and non-adjusted signal values outside the 2D region.

11. The system (**100**) according to claim **10**, wherein the gradual transition is a substantially first-order linear transition or second-order non-linear transition.

12. The system (**100**) according to any one of the above claims, further comprising an image processor (**180**) for i) establishing a 2D image region in the 2D image signal (**122**) which corresponds to the 2D region in the 2D auxiliary signal

(124), and ii) applying an image enhancement technique to image values of the 2D image signal within the 2D image region.

13. 3D display device comprising the system according to any one of the above claims.

14. Method (300) for processing a three-dimensional [3D] image signal, the 3D image signal comprising a two-dimensional [2D] image signal and a 2D auxiliary signal, the 2D auxiliary signal enabling 3D rendering of the 2D image signal on a 3D display, the method comprising:

obtaining (310) the 2D image signal and the 2D auxiliary signal;

enabling a user to establish a user-defined 2D region in the 2D image signal;

based on the user-defined 2D region, defining (320) a 2D region in the 2D auxiliary signal, the 2D region corresponding to a display region on a display plane of the 3D display when 3D rendering the 2D image signal using the 2D auxiliary signal;

obtaining (330) a depth reduction parameter, the depth reduction parameter representing a desired amount of depth reduction in the display region towards a neutral display depth when 3D rendering the 2D image signal on the 3D display; and

deriving (340) an adjustment value from the depth reduction parameter for enabling establishing the depth reduction in the display region by adjusting signal values of the 2D auxiliary signal within the 2D region based on the adjustment value.

15. Computer program product (360) comprising instructions for causing a processor system to perform the method (300) according to claim 14.

* * * * *

EFiled: Oct 21 2022 02:41PM EDT
Transaction ID 68288444
Case No. 2020-0766-JTL

EXHIBIT 2

TERM SHEET

FOR

DEVELOPMENT, SUPPLY, AND LICENSE AGREEMENT

BETWEEN

STREAM TV NETWORKS, INC.

AND

REMBRANDT 3D HOLDINGS LTD

April 9, 2019

Raja Rajan and Mathu Rajan are individual who are defendants in the Litigation

Stream TV Networks, Inc. ("Stream" or "Stream TV") is a Delaware corporation. Rembrandt 3D Holdings, Ltd ("Rembrandt") is a Nevis corporation. Rembrandt, Raja Rajan, Mathu Rajan, and Stream are referred to herein as the "Parties", and each one of them is a "Party".

This non-binding term sheet ("Term Sheet") details a global settlement arrangement between Stream and Rembrandt, intended to settle all disputes between them, ~~whether~~ existing as of the date hereof ~~or hereafter arising.~~ The final documentation regarding the Termsheet (the "Agreement") shall be executed by May 31, 2019. This Term Sheet is **non-binding** but subject to the Protective Order (Docket No. 60) signed by the Parties~~.~~ in the litigation captioned *Rembrandt 3d Holding LTD v. Stream TV Networks, Inc., et al.*, No. 17 Civ. 00882 (S.D.N.Y.) (the "Litigation").

1.	Confidentiality~~:~~	The Parties have executed a Protective Order in the Litigation (Docket No. 60) and the terms of the Protective Order shall cover this Term Sheet and negotiation. The Parties agree further that the negotiation is subject to Rule 408 of the Federal Rules of Evidence and all discussions or negotiations are inadmissible in any proceeding.
2.	Costs and Expenses	Each Party shall be responsible for its own costs and expenses in negotiating the terms of this transaction, and Rembrandt shall arrange for a first draft of the license, supply and development agreement(s). Stream will draft the Release Agreement.
3.	Law:	This Term Sheet and the terms for this transaction shall be governed by the laws of Delaware exclusively, and the Parties shall submit to that jurisdiction.
4.	Commencement	Commencement of this intended settlement shall be only triggered only upon the signing of the long form agreements that include the release agreement and the license, supply and development agreement(s).
5.	General Release	Contemporaneously with and subject to the payment of the

consideration of the settlement agreement, each Party shall enter into a general release of all claims, known and unknown (including any pending claims) against the other Party and its respective affiliates, subsidiaries, equity holders, directors, officers, employees, contractors, agents, advisors, counsel, successors and assigns.

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6. Products

(a) Provision of 4K Units –Stream TV will ship to Rembrandt ~~50~~ 4K Ultra-D 65" units; it is understood by the Parties that the 4K units will be provided "as is" and have no warranty or returnability available. Rembrandt will provide Stream TV with written notice ("Delivery Notice") of where the units are to be shipped as part of the Agreements. Any storage, tax, if any, or other incidental fees for those units will be the responsibility of Rembrandt once units are in the U.S. to the location specified on the Delivery Notice. Stream will pay transportation and all importation costs of these units.

(b) High Resolution Units

(1) As Stream TV builds 8K resolution units, after the Agreements are mutually executed, Stream will provide Rembrandt with ~~five~~ eight prototypes as follows:

i) the first unit by July 1, 2019;

ii) 2 units on or before September 1, 2019;

iii) 2 units on or before October 1, 2019;

iv) 3 units on or before December 1, 2019.

Stream will warehouse such 4k and 8k units (for the 4k units and prototypes of the 8k) in facilities until shipping is requested by Rembrandt to a destination within the United States. Rembrandt will provide Stream TV with written notice ("Delivery Notice of Prototypes") of where the units are to be shipped as part of the Agreements. Any storage, tax, if any, or other incidental fees for those units will be the responsibility of Rembrandt once units are in the U.S. to the location specified on the Delivery Notice of Prototypes. Stream will pay transportation and all importation costs of these units. The default is that the Delivery Notice of Prototypes is to the location of 128 Bull Hill Road, Newfield New York, 14867.

It is understood notwithstanding anything to the contrary Stream is not obligated to hold those samples for Rembrandt if the is a change to the default location Rembrandt is unwilling to ship the units within seven days of them being completed and in such case Stream may use those prototypes for any purpose thereafter without any obligation to Rembrandt.

(2) Standard Products - As Stream TV builds high-resolution

SKB

based 3D technology products, it shall offer Rembrandt a right of first refusal to purchase At Cost, ~~the lesser of 1% of the units produced or~~ and otherwise at standard commercial terms, the minimums provided below. It is understood by both Parties that Stream TV is not required to change its business model which may or may not include completing finished units. If Rembrandt accepts the order and meet the financial and volume requirements required by Stream TV, then Rembrandt will retain this option. If Rembrandt does not exercise this option with a specific plan within seven (7) business days, then Stream TV can offer this inventory to other customers as needed. Rembrandt will have a minimum right of first refusal on 1,000 units by December 31, 2019 and then increasing by 1,000 units/month every three months thereafter until the end of term. Such minimum right of first refusal is not cumulative and if Rembrandt does not use such right within a given month it does not carry over to future months. Rembrandt may purchase additional units by paying Most Favored Nation status at standard commercial terms.

7. OEM

Stream TV in good faith is not finishing products but will recommend to Rembrandt certain Original Equipment Manufacturers ("OEM") that Rembrandt may wish to utilize after it fully investigates the finished products capabilities under its specifications; however, the selection of OEM(s) is at Rembrandts discretion. In such case Stream TV will provide the 3D components directly to the OEM with Rembrandt's specifications.

White Label - Rembrandt may brand product purchased from Stream with Rembrandt trademarks. Rembrandt will not remove any patent number marking applied by Stream.

8. Term

The Term of the agreement shall continue through December 31, 2030. ~~Upon termination Stream shall have a fully paid up license to all technology rights provided under this agreement.~~

9. Rembrandt Grant of Rights

Rembrandt shall grant a non-exclusive license to Stream to all Rembrandt Technologies listed in Schedule A to this Term Sheet for Rembrandt.

10. Stream Grant of Rights

Stream shall grant Rembrandt a non-exclusive license to any existing Stream technologies that Stream has the right to license/sub-license solely to enable Rembrandt to distribute Products described herein. Rembrandt shall obtain or reimburse Stream for Stream's Philips license as part of the At Cost price, as applicable.

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11. Field	The licensed field of use from Rembrandt to Stream is all applications The licensed field of use from Stream to Rembrandt is all applications.
12. Territory	All territories whether or not patents are issued or pending or licensed. Sale to any distributor in any territory is permitted for the Field ~~and such sales shall be subject to royalties.~~
13. Co-Marketing	Rembrandt and Stream shall work cooperatively to educate and co-market the benefit of the no glasses 3D technology and agree to not disparage the other Party. Stream will be responsible for its own sales and marketing expenses and Rembrandt will be responsible for their own sales and marketing expenses.
14. Sub-license	Either Party may sublicense their rights to other parties for the purpose of having products ~~manufactured for sale~~ by the Party. ~~Further sublicensing requires the consent of the Party granting the license, which shall not be unreasonably withheld if the granting party would receive the same royalties on sales as if the Party that received the license was making the sale.~~ distribute
15. Consideration	In addition to the product provided as consideration and described above, Stream shall provide the following as consideration: a) Upon execution of the Agreements contemplated by this Term Sheet, Stream TV will pay to Rembrandt the lump sum of one million ($1,000,000) USD. It is understood that total will be paid in four instalments paid quarterly with the final payment on or before June 30, 2020. Stream shall also provide two million ~~[illegible]~~ warrants, with provision of a cashless exercise price at a $1.50 value per Warrant. ~~The warrants [illegible]~~ b) Stream TV will pay Rembrandt a monthly fee ~~of twenty thousand ($20,000) USD per month~~ beginning with the execution of the Agreement for the full Term of this Agreement, According to the following schedule: • 12 months @ $20,000 / per month • 12 months @ $24,000 / per month • 12 months @ $28,000 / per month • 12 months @ $32,000 / per month • 12 months @ $36,000 / per month • 79 months @ $40,000 / per month. The monthly payments shall be Accellerated upon a merger, acquisition, or change of control. No Accelleration by IPO.

SLS

SAB

Signed for and on behalf of Stream:	Signed for and on behalf of Rembrandt:
.... Signature	.... Signature
.... Print Name	.... Print Name
.... Witness Signature	.... Witness Signature
.... Print name	.... Print name
.... Date	.... Date

Raja Rajan

Mathu Rajan

JB

SCHEDULE A

1. Knowhow and trade secrets related to methodology for:

a. efficiently converting, correcting and optimizing a 2D+Depth video for playback on a 3D autostereoscopic associated with the Philips technology

b. utilizing the Philips 2d Switchable Lens technology for refractive and defractive lens switching for the creation of the 'lightfield' and 3d content artefact correction.

c. utilizing the On Screen Display functions of Borders and "Liveliness."

2. Trademarks

3. the patents asserted in Rembrandt's First Amended Complaint, and dismissed by the Court on March 28, 2018 (ECF No. 47)

JL S
SCB

Kathu H R

Representations and Warranties

The Parties represent and warrant ~~that~~ to one another that they will not bring a trade secret claim based upon any information that is the basis for the Litigation or was otherwise disclosed or learned ~~during the~~ during the pendency of the Litigation

Next Steps

- Stream to provide Warrant Agreement, Supply Agreement, and any patents filed within last 18 months.
- Stream will investigate and provide Rembrandt an answer as to whether it can represent and warrant that it will not revive any abandoned patents

SB
5.25

Kathm H P[illegible]

EFiled: Oct 21 2022 02:41PM EDT
Transaction ID 68288444
Case No. 2020-0766-JTL

EXHIBIT 3

Jack McLaughlin

From:	Christopher Michaels <michaels@bpmlegal.com>
Sent:	Tuesday, June 8, 2021 8:09 PM
To:	Jack McLaughlin
Subject:	FW: Rembrandt 3D IP Rights

From: Christopher Michaels
Sent: Wednesday, June 2, 2021 3:43 PM
To: Jack McLaughlin <jmclaughlin@ferryjoseph.com>
Subject: FW: Rembrandt 3D IP Rights

Christopher A. Michaels
Registered Patent Attorney
Chief Executive Officer

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118 N. Tioga Street, Suite 400, Ithaca, New York 14850
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Email: michaels@bpmlegal.com
Direct Dial: 607-203-9470

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From: Christopher Michaels
Sent: Tuesday, April 20, 2021 6:29 PM
To: McMichael, Lawrence G. <lmcmichael@dilworthlaw.com>; Weis, Martin J. <mweis@dilworthlaw.com>; Caplow, Yonit A. <ycaplow@dilworthlaw.com>
Cc: 'Chi Eng' <chi@englawfirm.com>; stephen3d@mac.com; ntwallace@aol.com
Subject: RE: Rembrandt 3D IP Rights

Thank you for responding so quickly. I have only shared public documents and information that is Rembrandt's information to share.

There is a protective order filed in the Southern District action. If you have Stream TV's current counsel in the Southern District action authorize disclosure, I can send copies of documents and correspondence that will get you up to speed quickly, but Stream TV's counsel should also have access to the relevant filings in the case.

While I understand that Stream TV has taken opposing positions in the Southern District litigation, Rembrandt 3D has taken a very consistent position that our technology is worth many times the outstanding liabilities of Stream TV. Shad Statsney was involved such that he would be in a difficult position to contest the value of the Rembrandt IP rights.

Currently, Stream can not share those documents sent by Rembrandt in either the SLS v Stream Delaware litigation or the bankruptcy case due to the protective order. However, with agreement from Rembrandt to the disclosure, I believe that Stream would be in a position to share those documents and put SLS in a tough position in the pending actions.

I fear that the Rajans will want to continue to argue the merits of our claims. That is not going to be helpful. Besides the fact that we have the substance of our claims well proven, any merits of their defenses are counter productive to Stream's immediate interests.

I hope you can see that arguing that Stream has a license worth over a billion dollars that was not transferred to SeeCubic would be helpful to Stream right now. All the better that Shad was involved in our case.

My proposal is:

1) for you to get permission from Stream's counsel in the SD litigation for us to release documents to you that are covered by the protective order;
2) then I will walk you through what we have in mind for you to submit prior to the April 26 hearing (you were unable to do so earlier because you lacked our permission to do so); and
3) we reach agreement on a resolution of Rembrandt's claims that will put the debtor in a unique position to move the company forward on a going concern basis. Specifically, Stream would be able to argue that it is the only one that holds a license to Rembrandt's dominating patent rights such that any plan filed by SeeCubic would be doomed to fail because SeeCubic would immediately be sued for patent infringement.

Please let me know when you are ready to discuss.

Chris

Christopher A. Michaels
Registered Patent Attorney
Chief Executive Officer

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From: McMichael, Lawrence G. <lmcmichael@dilworthlaw.com>
Sent: Tuesday, April 20, 2021 4:20 PM
To: Christopher Michaels <michaels@bpmlegal.com>; Weis, Martin J. <mweis@dilworthlaw.com>; Caplow, Yonit A. <ycaplow@dilworthlaw.com>
Cc: 'Chi Eng' <chi@englawfirm.com>; stephen3d@mac.com; ntwallace@aol.com
Subject: RE: Rembrandt 3D IP Rights

Chris: Thank you for reaching out. We are bankruptcy counsel for Stream and were not involved in any pre-petition litigation, including the claim by your client. I will get up to speed on it and would be happy to talk about a resolution with the Debtor.

I have a number of thoughts on how we might work together, but need some input from the Debtor before we can go much further. Please give me a couple of days and I will get back to you.

LAWRENCE G. MCMICHAEL | DILWORTH PAXSON LLP
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From: Christopher Michaels [mailto:michaels@bpmlegal.com]
Sent: Tuesday, April 20, 2021 3:57 PM
To: Weis, Martin J.; McMichael, Lawrence G.; Caplow, Yonit A.
Cc: 'Chi Eng'; stephen3d@mac.com; ntwallace@aol.com
Subject: Rembrandt 3D IP Rights

Dear counsel for Stream TV:

We understand that there is a hearing on April 26, 2021 in the Stream TV bankruptcy chapter 11 filing and that you are defending motions to dismiss the Stream TV bankruptcy.

We assume that you are aware of our pending litigation against Stream TV, but I have attached copies of our First Amended Complaint filed against Stream TV (additional exhibits sent by separate email). Regardless of the outcome of the pending motions in the bankruptcy, we feel a negotiated settlement is in the best interest for all parties.

Stephen Blumenthal is the key originator of the intellectual property advancements, which resulted in the developments currently included in the on-screen display of the Stream Networks TVs that we have evaluated. Steve's company, Rembrandt3D Holdings, owns all of the rights to the 3D without glasses technology that were developed by Steve by late 2009 and included in a patent application filed in December of 2009.

In January 2010, Steve started working with the Eindhoven based team, transferring all of his advancements, trade secrets and the know-how he had discovered from over two years, and 1,000's of hours of rendering with the 3DSolutions licensed tools. The-14-months spent working with his Dutch team included thousands of e-mails, hundreds of Skype calls, 43 3DFusion video projects, and 70 pages of detailed weekly meetings minutes with the same 12 Dutch team members that are now the SeeCubic engineering team. The technology Stream purports to own was based on the technology disclosed by Steve and 3DFusion to the Rajans and Steve's former Philip's 3DSolution's team, during the time when the "team" was working for the 3DFusion wholly own Dutch Corporate subsidiary, 3DFusionEU.BV.

The lawsuit that we filed against Stream TV and the Rajan's as individuals originally included a patent infringement complaint, which has been separated out by Judge Abrams. While the Supreme Court's decision in TC Heartland provides that we need to bring the patent infringement case in Philadelphia or Delaware, nothing about the substance of the patent infringement claim has changed. Rembrandt's First Amended Complaint has provided a detailed claim chart showing how every TV sold by Stream TV includes every element of the patent claims. After years of being on notice of infringement of the Rembrandt patents, Stream TV has not identified a single element of a single claim of Rembrandt's patents that is missing from the Stream TV. Nothing about the Delaware action or the bankruptcy provides anyone a license to Rembrandt's patents. Neither Stream TV, SeeCubic, or their licenses and customers are going to be able to sell a TV without infringing the Rembrandt's patents.

We thought we had reached a resolution with Stream TV that would have granted Stream TV a license to Rembrandt's technology rights and are seeking to enforce that resolution in the Southern District of New York.

Rembrandt's legal team is obviously working on contingency, while the costs of defending such a case will run into the 10-million-dollar range and be a detriment for any fund raising. At the end of the day, Rembrandt still wants to see a 3D TV on the market rather than litigate. Consequently, we still think there is a logical basis to seek a settlement now with a guaranteed outcome, rather than fight over IP rights with either Stream TV or SeeCubic.

Regardless of the outcome of SeeCubic's Delaware litigation or the motion to dismiss in the bankruptcy court, the Rembrandt technology rights are not transferring to SeeCubic. Stream TV can not transfer rights it does not own and Rembrandt's IP is interwoven into all of the technology Stream TV uses in its 3D displays. I have worked with clients trying to raise money in such a posture and advised private equity companies considering investing in firms with pending IP claims. While it is possible to raise funds under such a cloud, the investors pay pennies on the dollar for what would be a normal valuation.

I note from SeeCubic's filings that some of the common equity holders were included in SeeCubic in preference to any payments to the unsecured creditors. I would expect that the unsecured creditors will be unified in opposing the transfer of assets from Stream TV to SeeCubic or argue that any rights in SeeCubic that went to equity holders should be paid to the unsecured creditors instead.

The motion to dismiss is compelling except for its failure to mention the dispute regarding the ownership of the IP and licenses from Rembrandt. Even if the Delaware court's decision is upheld, I don't see anything in it that would transfer the license that Rembrandt is seeking to enforce against Stream TV. Assuming the bankruptcy proceeds, without the Rembrandt Licensing rights to the technology, it will not matter whose reorganization plan is approved. Rembrandt has the wherewithal to block any transfer of IP assets to either party, precluding any investor based business.

Ironically, if Stream TV performs its agreement with Rembrandt, Stream TV would have a license and be in a position to claim that the Rembrandt license is worth hundreds of millions of dollars such that Stream TV should be allowed to file a reorganization plan to allow it to proceed under license from Rembrandt to pay off the creditors.

We certainly contend that our IP rights are worth far more than Stream TV's liabilities and were clearly not transferred to SeeCubic in the Delaware action, so it seems that about the only asset Stream TV would have to oppose SeeCubic's motion to dismiss is to argue that it has a license from Rembrandt that dominates the assets that would be transferred to SeeCubic and that Stream TV has a going concern value based on the value of the licensing rights purchased from Rembrandt.

I propose that we set up a time to discuss in the near future, preferably in advance of the April 26 hearing.

Chris
IP Counsel for Rembrandt 3D

Christopher A. Michaels
Registered Patent Attorney
Chief Executive Officer

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www.DilworthLaw.com

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EFiled: Oct 21 2022 02:41PM EDT
Transaction ID 68288444
Case No. 2020-0766-JTL

EXHIBIT 4

Jack McLaughlin

From:	Christopher Michaels <michaels@bpmlegal.com>
Sent:	Tuesday, June 8, 2021 8:12 PM
To:	Jack McLaughlin
Subject:	FW: Rembrandt 3D IP Rights
Attachments:	26-First Amended Complaint.pdf; assignment-pat-42063-950.pdf; US8558830.pdf; US9521390.pdf; US9681114.pdf

From: Christopher Michaels
Sent: Wednesday, June 2, 2021 3:41 PM
To: Jack McLaughlin <jmclaughlin@ferryjoseph.com>
Subject: FW: Rembrandt 3D IP Rights

Christopher A. Michaels
Registered Patent Attorney
Chief Executive Officer

BROWN & MICHAELS, PC
118 N. Tioga Street, Suite 400, Ithaca, New York 14850
Main: 607-256-2000 Fax: 607-256-3628
www.brownandmichaels.com

Email: michaels@bpmlegal.com
Direct Dial: 607-203-9470

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From: Christopher Michaels
Sent: Tuesday, April 20, 2021 3:57 PM
To: mweis@dilworthlaw.com; lmcmichael@dilworthlaw.com; ycaplow@dilworthlaw.com
Cc: 'Chi Eng' <chi@englawfirm.com>; stephen3d@mac.com; ntwallace@aol.com
Subject: Rembrandt 3D IP Rights

Dear counsel for Stream TV:

We understand that there is a hearing on April 26, 2021 in the Stream TV bankruptcy chapter 11 filing and that you are defending motions to dismiss the Stream TV bankruptcy.

We assume that you are aware of our pending litigation against Stream TV, but I have attached copies of our First Amended Complaint filed against Stream TV (additional exhibits sent by separate email). Regardless of the outcome of the pending motions in the bankruptcy, we feel a negotiated settlement is in the best interest for all parties.

Stephen Blumenthal is the key originator of the intellectual property advancements, which resulted in the developments currently included in the on-screen display of the Stream Networks TVs that we have evaluated. Steve's company,

Rembrandt3D Holdings, owns all of the rights to the 3D without glasses technology that were developed by Steve by late 2009 and included in a patent application filed in December of 2009.

In January 2010, Steve started working with the Eindhoven based team, transferring all of his advancements, trade secrets and the know-how he had discovered from over two years, and 1,000's of hours of rendering with the 3DSolutions licensed tools. The-14-months spent working with his Dutch team included thousands of e-mails, hundreds of Skype calls, 43 3DFusion video projects, and 70 pages of detailed weekly meetings minutes with the same 12 Dutch team members that are now the SeeCubic engineering team. The technology Stream purports to own was based on the technology disclosed by Steve and 3DFusion to the Rajans and Steve's former Philip's 3DSolution's team, during the time when the "team" was working for the 3DFusion wholly own Dutch Corporate subsidiary, 3DFusionEU.BV.

The lawsuit that we filed against Stream TV and the Rajan's as individuals originally included a patent infringement complaint, which has been separated out by Judge Abrams. While the Supreme Court's decision in TC Heartland provides that we need to bring the patent infringement case in Philadelphia or Delaware, nothing about the substance of the patent infringement claim has changed. Rembrandt's First Amended Complaint has provided a detailed claim chart showing how every TV sold by Stream TV includes every element of the patent claims. After years of being on notice of infringement of the Rembrandt patents, Stream TV has not identified a single element of a single claim of Rembrandt's patents that is missing from the Stream TV. Nothing about the Delaware action or the bankruptcy provides anyone a license to Rembrandt's patents. Neither Stream TV, SeeCubic, or their licenses and customers are going to be able to sell a TV without infringing the Rembrandt's patents.

We thought we had reached a resolution with Stream TV that would have granted Stream TV a license to Rembrandt's technology rights and are seeking to enforce that resolution in the Southern District of New York.

Rembrandt's legal team is obviously working on contingency, while the costs of defending such a case will run into the 10-million-dollar range and be a detriment for any fund raising. At the end of the day, Rembrandt still wants to see a 3D TV on the market rather than litigate. Consequently, we still think there is a logical basis to seek a settlement now with a guaranteed outcome, rather than fight over IP rights with either Stream TV or SeeCubic.

Regardless of the outcome of SeeCubic's Delaware litigation or the motion to dismiss in the bankruptcy court, the Rembrandt technology rights are not transferring to SeeCubic. Stream TV can not transfer rights it does not own and Rembrandt's IP is interwoven into all of the technology Stream TV uses in its 3D displays. I have worked with clients trying to raise money in such a posture and advised private equity companies considering investing in firms with pending IP claims. While it is possible to raise funds under such a cloud, the investors pay pennies on the dollar for what would be a normal valuation.

I note from SeeCubic's filings that some of the common equity holders were included in SeeCubic in preference to any payments to the unsecured creditors. I would expect that the unsecured creditors will be unified in opposing the transfer of assets from Stream TV to SeeCubic or argue that any rights in SeeCubic that went to equity holders should be paid to the unsecured creditors instead.

The motion to dismiss is compelling except for its failure to mention the dispute regarding the ownership of the IP and licenses from Rembrandt. Even if the Delaware court's decision is upheld, I don't see anything in it that would transfer the license that Rembrandt is seeking to enforce against Stream TV. Assuming the bankruptcy proceeds, without the Rembrandt Licensing rights to the technology, it will not matter whose reorganization plan is approved. Rembrandt has the wherewithal to block any transfer of IP assets to either party, precluding any investor based business.

Ironically, if Stream TV performs its agreement with Rembrandt, Stream TV would have a license and be in a position to claim that the Rembrandt license is worth hundreds of millions of dollars such that Stream TV should be allowed to file a reorganization plan to allow it to proceed under license from Rembrandt to pay off the creditors.

We certainly contend that our IP rights are worth far more than Stream TV's liabilities and were clearly not transferred to SeeCubic in the Delaware action, so it seems that about the only asset Stream TV would have to oppose SeeCubic's motion to dismiss is to argue that it has a license from Rembrandt that dominates the assets that would be transferred to SeeCubic and that Stream TV has a going concern value based on the value of the licensing rights purchased from Rembrandt.

I propose that we set up a time to discuss in the near future, preferably in advance of the April 26 hearing.

Chris
IP Counsel for Rembrandt 3D

Christopher A. Michaels
Registered Patent Attorney
Chief Executive Officer

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118 N. Tioga Street, Suite 400, Ithaca, New York 14850
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Email: michaels@bpmlegal.com
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EFiled: Oct 21 2022 02:41PM EDT
Transaction ID 68288444
Case No. 2020-0766-JTL

EXHIBIT 5

Jack McLaughlin

From:	Christopher Michaels <michaels@bpmlegal.com>
Sent:	Tuesday, June 8, 2021 8:11 PM
To:	Jack McLaughlin
Subject:	FW: Rembrandt 3D IP Rights
Attachments:	26-First Amended Complaint.pdf; US8558830.pdf; US9521390.pdf; US9681114.pdf; assignment-pat-42063-950.pdf

---

From: Christopher Michaels
Sent: Wednesday, June 2, 2021 3:41 PM
To: Jack McLaughlin <jmclaughlin@ferryjoseph.com>
Subject: FW: Rembrandt 3D IP Rights

Christopher A. Michaels
Registered Patent Attorney
Chief Executive Officer

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Email: michaels@bpmlegal.com
Direct Dial: 607-203-9470

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From: Christopher Michaels
Sent: Tuesday, April 20, 2021 3:24 PM
To: 'eben.colby@skadden.com' <eben.colby@skadden.com>; 'marley.brumme@skadden.com' <marley.brumme@skadden.com>; 'joseph.larkin@skadden.com' <joseph.larkin@skadden.com>; 'jenness.parker@skadden.com' <jenness.parker@skadden.com>; 'jason.liberi@skadden.com' <jason.liberi@skadden.com>; 'jlathrop@rc.com' <jlathrop@rc.com>; 'dwright@rc.com' <dwright@rc.com>; 'Alissa.Castaneda@quarles.com' <Alissa.Castaneda@quarles.com>; 'Brandon.Krajewski@quarles.com' <Brandon.Krajewski@quarles.com>; 'Brittany.Ogden@quarles.com' <Brittany.Ogden@quarles.com>
Cc: stephen3d@mac.com; ntwallace@aol.com; 'Chi Eng' <chi@englawfirm.com>
Subject: Rembrandt 3D IP Rights

Dear counsel for SLS Holdings VI, LLC and SeeCubic, Inc.:

We understand that there is a hearing on April 26, 2021 in the Stream TV bankruptcy chapter 11 filing and that you have filed for a motion to dismiss the Stream TV bankruptcy.

We assume that you are aware of our pending litigation against Stream TV, but I have attached copies of our First Amended Complaint filed against Stream TV (additional exhibits sent by separate email). Regardless of the outcome of the pending motions in the bankruptcy, we feel a negotiated settlement is in the best interest for all parties.

Stephen Blumenthal is the key originator of the intellectual property advancements, which resulted in the developments currently included in the on-screen display of the Stream Networks TVs that we have evaluated. Steve's company, Rembrandt3D Holdings, owns all of the rights to the 3D without glasses technology that were developed by Steve by late 2009 and included in a patent application filed in December of 2009.

In January 2010, Steve started working with the Eindhoven based team, transferring all of his advancements, trade secrets and the know-how he had discovered from over two years, and 1,000's of hours of rendering with the 3DSolutions licensed tools. The-14-months spent working with his Dutch team included thousands of e-mails, hundreds of Skype calls, 43 3DFusion video projects, and 70 pages of detailed weekly meetings minutes with the same 12 Dutch team members that are now the SeeCubic engineering team. The technology Stream purports to own was based on the technology disclosed by Steve and 3DFusion to the Rajans and Steve's former Philip's 3DSolution's team, during the time when the "team" was working for the 3DFusion wholly own Dutch Corporate subsidiary, 3DFusionEU.BV.

The lawsuit that we filed against Stream TV and the Rajan's as individuals originally included a patent infringement complaint, which has been separated out by Judge Abrams. While the Supreme Court's decision in TC Heartland provides that we need to bring the patent infringement case in Philadelphia or Delaware, nothing about the substance of the patent infringement claim has changed. Rembrandt's First Amended Complaint has provided a detailed claim chart showing how every TV sold by Stream TV includes every element of the patent claims. After years of being on notice of infringement of the Rembrandt patents, Stream TV has not identified a single element of a single claim of Rembrandt's patents that is missing from the Stream TV. Nothing about the Delaware action or the bankruptcy provides anyone a license to Rembrandt's patents. Neither Stream TV, SeeCubic, or their licenses and customers are going to be able to sell a TV without infringing the Rembrandt's patents.

We thought we had reached a resolution with Stream TV that would have granted Stream TV a license to Rembrandt's technology rights and are seeking to enforce that resolution in the Southern District of New York. We reached this agreement with Stream TV when Shad Statsney was the CFO.

Rembrandt's legal team is obviously working on contingency, while the costs of defending such a case will run into the 10-million-dollar range and be a detriment for any fund raising. At the end of the day, Rembrandt still wants to see a 3D TV on the market rather than litigate. Consequently, we still think there is a logical basis to seek a settlement now with a guaranteed outcome, rather than fight over IP rights with either Stream TV or SeeCubic.

Regardless of the outcome of SeeCubic's Delaware litigation or the motion to dismiss in the bankruptcy court, the Rembrandt technology rights are not transferring to SeeCubic. Stream TV can not transfer rights it does not own and Rembrandt's IP is interwoven into all of the technology Stream TV uses in its 3D displays. Assuming the physical assets and stock in the subsidiary companies are transferred to SeeCubic, that just means that SeeCubic is trying to raise funding after being put on notice of a patent infringement, contract, and trade secret misappropriation claim. I have worked with clients trying to raise money in such a posture and advised private equity companies considering investing in firms with pending IP claims. While it is possible to raise funds under such a cloud, the investors pay pennies on the dollar for what would be a normal valuation.

I note from SeeCubic's filings that some of the common equity holders were included in SeeCubic in preference to any payments to the unsecured creditors. I would expect that the unsecured creditors will be unified in opposing the transfer of assets from Stream TV to SeeCubic or argue that any rights in SeeCubic that went to equity holders should be paid to the unsecured creditors instead.

Your motion to dismiss is compelling except for its failure to mention the dispute regarding the ownership of the IP and licenses from Rembrandt. Even if the Delaware court's decision is upheld, I don't see anything in it that would transfer the license that Rembrandt is seeking to enforce against Stream TV. Assuming the bankruptcy proceeds, without the Rembrandt Licensing rights to the technology, it will not matter whose reorganization plan is approved. Rembrandt has the wherewithal to block any transfer of IP assets to either party, precluding any investor based business.

Ironically, if Stream TV performs its agreement with Rembrandt, they would have a license and be in a position to claim that Rembrandt license is worth hundreds of millions of dollars such that Stream TV should be allowed to file a reorganization plan to allow it to proceed under license from Rembrandt to pay off the creditors.

We certainly contend that our IP rights are worth far more than Stream TV's liabilities and were clearly not transferred to SeeCubic in the Delaware action, so it seems that about the only asset Stream TV would have to oppose SeeCubic's motion to dismiss is to argue that it has a license from Rembrandt that dominates the assets that would be transferred to SeeCubic and that Stream TV has a going concern value based on the value of the licensing rights purchased from Rembrandt. In addition, the unsecured creditors could use it as a way to oppose the motion to dismiss and to push for the unsecured creditors to get a better outcome.

I propose that we set up a time to discuss in the near future, preferably in advance of the April 26 hearing.

Chris
IP Counsel for Rembrandt 3D

Christopher A. Michaels
Registered Patent Attorney
Chief Executive Officer

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EFiled: Oct 21 2022 02:41PM EDT
Transaction ID 68288444
Case No. 2020-0766-JTL

EXHIBIT 6

THIS SETTLEMENT AGREEMENT AND MUTUAL RELEASE (this "Agreement") is entered into as of May 23, 2021 (the "Effective Date"), by and among, **Stream TV Networks, Inc.**, a Delaware corporation (the "Company" or "Stream TV"), **Mathu Rajan** ("M. Rajan"), and **Raja Rajan** ("R. Rajan," and, together with the Company and M. Rajan, collectively, the "Company Parties"), on the one side, and **Rembrandt 3D Holding LTD**, a Nevis corporation ("Rembrandt") on the other side. Each of the Company Parties and Rembrandt are referred to herein collectively as the "Parties" and each as a "Party".

BACKGROUND

Stream TV is a Philadelphia-based new media company created to serve a consumer market seeking enhanced entertainment and communications experiences through devices with unlimited accessibility and superior quality;

Rembrandt is the successor to 3DFusion Corp. ("3D Fusion");

On January 6, 2017, Rembrandt filed suit against the Company in the Supreme Court of New York, New York County, which the Company removed to the U.S. District Court for the Southern District of New York captioned Rembrandt 3D Holding LTD v. Stream TV Network, Inc., et al., No. 17 Civ. 00882 (RA) (KHP) (S.D.N.Y.) (the "Litigation");

This Agreement details a global settlement arrangement between Stream and Rembrandt, intended to settle all disputes between them, existing as of the effective date of May 23, 2021 ("Effective Date"). This Agreement is subject to the Protective Order (Docket No. 60) signed by the Parties in the Litigation.

Without admitting liability for any claim or damages, the Parties to this Agreement desire to settle the Litigation and agree to enter this Settlement Agreement and Mutual Release.

NOW THEREFORE, in consideration of the mutual promises, covenants, undertakings and agreements set forth herein, the sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Confidentiality:	The Parties have executed a Protective Order in the Litigation (Docket No. 60) and the terms of the Protective Order shall cover this Agreement.
2. Costs and Expenses	Each Party shall be responsible for its own costs and expenses in negotiating the terms of this Agreement.
3. Law:	This Agreement shall be governed by the laws of Delaware, without regard to its conflict of law principles.
4. Commencement	Commencement of this intended settlement shall be triggered upon the execution of this Agreement and the Warrant

Agreement (Exhibit A) (which is incorporated herein by reference) and the attached Stipulation Of Voluntary Dismissal Pursuant To F.R.C.P. 41(a)(1)(A)(ii) (Exhibit B) which will be executed immediately after execution of this Agreement.

5. General Release

a. Each of the Company Parties and their agents, respective insurance companies, third-party administrators, parents, subsidiaries, affiliates, owners, officers, directors, members, managers, general partners, limited partners, agents, employees, servants, assigns, predecessors, successors, shareholders, representatives, special servicers, related entities, and attorneys do hereby fully, knowingly, voluntarily, intentionally, unconditionally, and irrevocably waive, release, and forever discharge any and all claims, debts, demands, losses, actions, causes of actions, suits, costs, damages, expenses, accounts, covenants, contracts, controversies, agreements, promises, obligations, and liabilities whatsoever, both in law and in equity, in contract, tort or otherwise, all whether known or unknown, which they may have now, or ever may have, or have had, past, present, or future, against Rembrandt and its predecessors, successors, affiliates, subsidiaries, agents, officers, directors, members, managers, employees, owners and shareholders, relating to the conduct, facts or circumstances giving rise to the Litigation prior to the Effective Date.

b. Upon payment of all payments under Section 15. Consideration, each of Rembrandt and their agents, respective insurance companies, third-party administrators, parents, subsidiaries, affiliates, owners, officers, directors, members, managers, general partners, limited partners, agents, employees, servants, assigns, predecessors, successors, shareholders, representatives, special servicers, related entities, and attorneys agree to fully, knowingly, voluntarily, intentionally, unconditionally, and irrevocably waive, release, and forever discharge any and all claims, debts, demands, losses, actions, causes of actions, suits, costs, damages, expenses, accounts, covenants, contracts, controversies, agreements, promises obligations, and liabilities whatsoever, both in law and in equity, in contract, tort or otherwise, all whether known or unknown, which they may have now, or ever may have,

or have had, past, present, or future, against any of the Company Parties and their respective predecessors, successors, affiliates, subsidiaries, agents, officers, directors, employees, and shareholders (and, in the case of M. Rajan and R. Rajan, their respective heirs, personal representatives, executors, and administrators) relating to the conduct, facts or circumstances giving rise to the Litigation prior to the Effective Date.

6. Products

(a) Provision of 4K Units – Stream TV will ship to Rembrandt 100 of the following units: Display/Monitor Model: SC65D21Q-4K 65" Ultra-D Display (the "4K Units"). It is understood by the Parties that the 4K units will be provided "as is" and have no warranty or returnability available. Rembrandt will provide Stream TV with written notice ("Delivery Notice") of where the units are to be shipped as part of the Agreements. Any storage, tax, if any, or other incidental fees for those units will be the responsibility of Rembrandt once units are in the U.S. to the location specified on the Delivery Notice. Stream will pay transportation and all importation costs of these units. Upon execution of this Agreement Stream TV will notify Rembrandt if it will not be able to deliver any of the 4K Units and $5,250.00 will be added to the consideration under Section 15. A. for each 4K Unit that Stream TV can not provide upon execution or Stream TV will agree to provide additional 8K prototype units as a replacement for the 4K units to be delivered at up to 10 units/month starting seven months after Prototype Commencement.

(b) High Resolution Units

(1) As Stream TV builds 8K resolution units, after the Agreements are mutually executed, Stream will provide Rembrandt with eight prototypes as follows:

i) the first unit within one month of the first prototype created by Stream TV of an 8K resolution unit after execution of this Agreement ("Prototype Commencement");

ii) 2 units on or before three months from Prototype Commencement;

iii) 2 units on or before four months from Prototype Commencement; and

iv) 3 units on or before six months from

Prototype Commencement.
Stream TV will warehouse such 4K and 8K units (for the 4K units and prototypes of the 8K) in facilities until shipping is requested by Rembrandt to a destination within the United States. Rembrandt will provide Stream TV with written notice ("Delivery Notice of Prototypes") of where the units are to be shipped as part of the Agreements. Any storage, tax, if any, or other incidental fees for those units will be the responsibility of Rembrandt once units are in the U.S. to the location specified on the Delivery Notice of Prototypes. Stream TV will pay transportation and all importation costs of these units. The default is that the Delivery Notice of Prototypes is to the location of 128 Bull Hill Road, Newfield New York, 14867.

It is understood notwithstanding anything to the contrary Stream TV is not obligated to hold those samples for Rembrandt if the is a change to the default location Rembrandt is unwilling to ship the units within seven days of them being completed and in such case Stream TV may use those prototypes for any purpose thereafter without any obligation to Rembrandt.

(2) Standard Products - As Stream TV builds high-resolution based 3D technology products, it shall offer Rembrandt a right of first refusal to purchase At Cost, and otherwise at standard commercial terms, the minimums provided below. It is understood by both Parties that Stream TV is not required to change its business model which may or may not include completing finished units. If Rembrandt accepts the order and meet the financial and volume requirements required by Stream TV, then Rembrandt will retain this option. If Rembrandt does not exercise this option with a specific plan within seven (7) business days, then Stream TV can offer this inventory to other customers as needed. Rembrandt will have a minimum right of first refusal to purchase Standard Products At Cost on 63,000 units plus and 7,000 units/month on execution of this Agreement and then increasing by 1,000 units/month every three months thereafter until the end of term.

Such minimum right of first refusal is cumulative and if Stream TV is not in production or Rembrandt does not use such right within a given month it carries over to future months. Rembrandt may purchase additional units by paying standard commercial terms with most favored nation status on a per unit price basis and similar shipping terms. At present the following products defined in the attached specification sheets provided by Stream TV on June 13, 2019 are Standard Products attached hereto as Exhibit B, which is incorporated herein by reference.)

(3) Title for each of the Units shall transfer to Rembrandt, and risk of loss will be assumed by Rembrandt, upon delivery of each such Unit.

(4) Tax Matters. Rembrandt shall be solely responsible for any taxes chargeable to the purchaser of goods in connection with or arising out of the transfer of the Units. Stream TV shall be solely responsible for any taxes chargeable to the seller of goods in connection with or arising out of the transfer of the Units.

7. OEM	Stream TV in good faith is not finishing products but will recommend to Rembrandt certain Original Equipment Manufacturers ("OEM") that Rembrandt may wish to utilize after it fully investigates the finished products capabilities under its specifications; however, the selection of OEM(s) is at Rembrandts discretion. In such case Stream TV will provide the 3D components directly to the OEM with Rembrandt's specifications. White Label - Rembrandt may brand product purchased from Stream TV with Rembrandt trademarks. Rembrandt will not remove any patent number marking applied by Stream.
8. Term	The Term of the Agreement shall continue through December 31, 2030.
9. Rembrandt Grant of Rights	Rembrandt hereby grants a non-exclusive license to Stream TV to all Rembrandt Technologies listed in Schedule A to this

Agreement for Rembrandt.

10. Stream Grant of Rights	Stream TV hereby grants Rembrandt a non-exclusive license to any existing Stream technologies that Stream TV has the right to license/sub-license solely to enable Rembrandt to distribute Products described herein. Rembrandt shall obtain or reimburse Stream for Stream's Philips license as part of the At Cost price, as applicable.
11. Field	The licensed field of use from Rembrandt to Stream TV is all applications The licensed field of use from Stream TV to Rembrandt is all applications.
12. Territory	All territories whether or not patents are issued or pending or licensed. Sale to any distributor in any territory is permitted for the Field.
13. Co-Marketing	Rembrandt and Stream TV shall work cooperatively to educate and co-market the benefit of the no glasses 3D technology and agree to not disparage the other Party. Stream will be responsible for its own sales and marketing expenses and Rembrandt will be responsible for their own sales and marketing expenses.
14. Sub-license	Either Party may sublicense their rights to other parties for the purpose of having products distributed by the Party.
15. Consideration	In addition to the product provided as consideration and described above, Stream TV shall provide the following as consideration: a) Upon execution of this Agreement, Stream TV agrees to pay to Rembrandt the lump sum of one million five hundred twenty eight thousand ($1,528,000) USD and is due immediately. b) Stream TV is providing warrants equal to X% of the outstanding stock in Stream TV after Stream TV has raised at least sixty million dollars in capital in excess of all outstanding debt and currently liabilities, with provision of a cashless exercise price at a $$Y value per warrant, pursuant to the attached Warrant Agreement (Exhibit A), which is incorporated herein by reference.

"X%" shall be equal to the 2,000,000/(the number of shares in Stream TV outstanding on April 9, 2019). "$Y value" shall be equal to (the book equity value of Stream TV at issuance)/(the number of shares in Stream TV outstanding at issuance)

c) Stream TV will pay Rembrandt a monthly fee ("Monthly Payment") beginning with the execution of the Agreement for the full Term of this Agreement, according to the following schedule:
   a. 12 months @ $28,000/per month
   b. 12 months @ $32,000/per month
   c. 12 months @ $36,000/per month
   d. 79 months @ $40,000/per month
   The monthly payments shall be accelerated upon a merger, acquisition, or change of control. No acceleration by IPO.

16. Payments

Stream TV shall pay each Installment and Monthly Payment by wire transfer of immediately available funds to an account designated by Rembrandt in writing below, or otherwise designated by Rembrandt in writing and delivered to mathu@streamacquistiongroup.com:

Eng Law Firm, Attorney Trust Account [TD Bank A/C# 4327484509 ABA# 031201360].

17. Representations and Warranties

The Parties represent and warrant to one another that they will not bring a trade secret claim based upon any information that is the basis for the Litigation or was otherwise disclosed of learned during the pendency of the Litigation.

Stream TV represents and warrants that it has not revived and will not revive any abandoned patents or patent applications that were abandoned prior to the Effective Date.

Each of the Parties hereby represents and warrants to the others that, as of the Effective Date, (i) it has full power and authority to execute and deliver this Agreement and to perform its obligations hereunder, (ii) the execution, delivery, and performance of this Agreement have been duly authorized by all necessary corporate or company action on its behalf, (iii) this Agreement has been duly and validly executed and delivered by it and constitutes a legal, valid and binding obligation enforceable against it in accordance with the terms

of this Agreement, (iv) each individual signing this Agreement in a representative capacity acknowledges and represents that he/she is duly authorized to execute this Agreement in such capacity in the name of, and on behalf of, the designated Party; and (v) the agreements and understandings identified herein constitute all of the agreements and understandings between and among the Parties with respect to the subject matter hereof.

18. Notices

Notices required by this Agreement shall be submitted either by any form of overnight courier or by hand delivery, and simultaneously by e-mail, as follows:

To Stream TV, ~~Raja Rajan, &~~ Mathu Rajan:
Stream TV Networks, Inc
2009 Chestnut Street
3rd Floor
Philadelphia, PA 19103
~~Attention: General Counsel,~~ Mathu and~~/or~~ Raja Rajan individually

and

XXX

To Rembrandt:
128 Bull Hill Road
Newfield, New York 14867
Attention: Stephen Blumenthal
Email: Stephen3d@mac.com

and

Eng Law Firm
369 Lexington Ave., 2nd Floor
New York, New York 10017
Attention: Chi Eng
Email: chi@englawfirm.com

Brown & Michaels, PC
118 N. Tioga St, 4th Floor
Ithaca, NY 14850
Attention: Christopher Michaels
Email: michaels@bpmlegal.com

19. Advice of Counsel	Each Party has been represented by counsel of its own selection, has reviewed this Agreement, has had the terms of this Agreement explained by counsel, and understands the contents and effect of this Agreement. Each Party enters into this Agreement wholly upon each Party's own respective judgments, beliefs and knowledge of the matters set forth herein and on the advice of each Party's own respective attorneys.
20. Entire Agreement	It is expressly understood and agreed that this Agreement along with all of the following documents: 1) the Warrant Agreement; and 2) the Protective Order in the Litigation (Docket No. 60) constitutes the entire and complete understanding and agreement among the Parties hereto in regard to the subject matter of the dispute described above and the terms hereof, and supersedes and replaces all prior negotiations, agreements or understandings among the Parties, whether written or oral, concerning the subject matter of this Agreement. Each of the Parties acknowledges and represents that no other Party or agent or attorney of any other Party has made a promise, representation, or warranty whatsoever, express or implied, not contained herein concerning the subject matter of this Agreement. Each Party acknowledges and represents that it has not executed this Agreement in reliance upon any promise, representation, or warranty whatsoever that is not expressly set forth in this Agreement.
21. Severability	If any provision of this Agreement shall be invalid, illegal or otherwise unenforceable, such provision shall be severable from all other provisions of this Agreement, and the validity, legality, and enforceability of the remaining provisions of this Agreement shall not be adversely affected or impaired, and shall remain in full force and effect.
22. Binding Effect	This Agreement shall be binding on, and shall be enforceable against, and shall inure to the benefit of the Parties to this Agreement and their respective past and present officers, directors, affiliates, member firms, subsidiaries, parents, successors, shareholders, members, partners, general partners, limited partners, principals, participating principals, managing members or other agents, management personnel, attorneys, servants, employees, representatives of any other kind (and any officers, directors, members or shareholders of

any of the foregoing which are not natural persons), spouses, estates, executors, estate administrators, heirs, and assigns.

23. Waiver and Amendment	No provision of or rights under this Agreement may be waived or modified unless in writing and signed by the Party whose rights are thereby waived or modified. Waiver of any one provision herein shall not be deemed to be a waiver of any other provision herein (whether similar or not), nor shall such waiver constitute a continuing waiver unless otherwise expressly so provided. This Agreement may not be amended except through an instrument in writing signed by the Parties hereto.
24. Further Assurances	Each Party shall cooperate fully in the execution and delivery of this Agreement and shall take, or cause to be taken, such further action as may be reasonably necessary or appropriate to effectuate or facilitate the terms of this Agreement, including the execution and delivery of any further documents that may be necessary or appropriate for that purpose. Each Party further agrees to take no action, directly or indirectly, to avoid or circumvent, in whole or in part, the terms of this Agreement.
25. Costs	The Parties acknowledge that each Party is to bear its own costs, fees, and expenses, including attorneys' fees, incurred in connection with the dispute giving rise to this Agreement.
26. Dispute Resolution	In the event of a dispute arising from this Settlement Agreement, the parties agree to resolve such dispute in good faith within fifteen (15) business days of receipt of notice of such dispute. If the parties fail to resolve such dispute, the parties consent to initially seek mediation by the Court in the Litigation, which Court the parties also agree shall maintain jurisdiction over any dispute arising from this Agreement.
27. Right to Attorney's Fees in Case of Breach	In the event of any dispute or litigation arising out of or concerning this Agreement, the prevailing Party shall be entitled to an award against the non-prevailing Party of its reasonable attorney's fees and costs.
28. Headings	The various headings of this Agreement are inserted for convenience only and shall not affect the interpretation of this Agreement.

29. Counterparts and Transmission of Signatures	This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Original signatures transmitted by electronic mail or facsimile shall be deemed to be original signatures. No Party shall be bound hereby unless and until all other Parties have executed this Agreement.
30. Authorized Signature	Each individual signing this Agreement in a representative capacity acknowledges and represents that he is duly authorized to execute this Agreement in such capacity in the name of, and on behalf of, the designated corporation, partnership, limited liability company, trust or other entity.
31. Joint Preparation	This Agreement shall be deemed to have been prepared jointly by the Parties, and any uncertainty or ambiguity existing herein shall not be interpreted against any Party by reason of its drafting of this Agreement, but shall be interpreted according to the application of the general rules of interpretation for arm's length agreements.

IN WITNESS WHEREOF, the Parties do hereby execute this Agreement by duly authorized representatives as of the Effective Date:

Signed for and on behalf of Defendants:

Signature
STREAM TV NETWORK, INC.,

By: Mathu Rajan, Chief Executive Officer

Date: May 23, 2021

Signed for and on behalf of Plaintiff:

Signature
REMBRANDT 3D HOLDING LTD

By: Stephen Blumenthal, President/CEO

Date: May 23, 2021

Signature
Mathu Rajan, Individually

Date: May 23, 2021

Signature
Raja Rajan, Individually

Date: May 23, 2021

SCHEDULE A

1. Know how and trade secrets related to methodology for:
   a. efficiently converting, correcting and optimizing a 2D+Depth video for playback on a 3D autostereoscopic associated with the Philips technology
   b. utilizing the Philips 2d Switchable Lens technology for refractive and defractive lens switching for the creation of the 'lightfield' and 3d content artefact correction.
   c. utilizing the On Screen Display functions of Borders and "Liveliness."
2. Trademarks
3. The patents asserted in Rembrandt's First Amended Complaint, and dismissed by the Court on March 28, 2018 (ECF No. 47)

Exhibit A

(Warrant Agreement)

WARRANT

THIS WARRANT AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS WARRANT HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR QUALIFIED UNDER ANY STATE OR FOREIGN SECURITIES LAWS AND MAY NOT BE OFFERED FOR SALE, SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED OR ASSIGNED UNLESS (I) A REGISTRATION STATEMENT COVERING SUCH SHARES IS EFFECTIVE UNDER THE ACT AND IS QUALIFIED UNDER APPLICABLE STATE AND FOREIGN LAW OR (II) THE TRANSACTION IS EXEMPT FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS UNDER THE ACT AND THE QUALIFICATION REQUIREMENTS UNDER APPLICABLE STATE AND FOREIGN LAW AND, IF THE COMPANY REQUESTS, AN OPINION SATISFACTORY TO THE COMPANY TO SUCH EFFECT HAS BEEN RENDERED BY COUNSEL.

Warrant Certificate No.:
Original Issue Date:

FOR VALUE RECEIVED, Stream TV Networks, Inc., a Delaware USA corporation (the "**Company**"), hereby certifies that Rembrandt 3D Holdings, Ltd ("Rembrandt") is a Nevis corporation with an office at 128 Bull Hill Road, Newfield, New York 14867, or its registered and permitted assigns (the "**Holder**"), is entitled to purchase from the Company XXX (XXX) duly authorized, validly issued, fully paid and non-assessable shares of Common Stock at a purchase price per share of $YYY (the "**Exercise Price**"), all subject to the terms and conditions set forth below in this Warrant. Certain capitalized terms used herein are defined in **Section 1** hereof.

1. Definitions. As used in this Warrant, the following terms have the respective meanings set forth below:

"**Aggregate Exercise Price**" means an amount equal to the product of (a) the number of Warrant Shares in respect of which this Warrant is then being exercised pursuant to **Section 3** hereof, multiplied by (b) the Exercise Price in accordance with the terms of this Warrant.

"**Board**" means the board of directors of the Company. "**Business Day**" means any day, except a Saturday, Sunday or legal holiday, on which banking institutions in New York City are authorized or obligated by law or executive order to close.

"**Common Stock**" means the Class A Common Stock, par value $0.00001 per share, of the Company, and any capital stock into which such Common Stock shall have been converted, exchanged or reclassified following the date hereof.

"**Exercise Date**" means the date on which the conditions to such exercise as set forth in **Section 3** shall have been satisfied at or prior to 5:00 p.m., New York time, on a Business Day, including, without limitation, the receipt by the Company of the Exercise Agreement, the Warrant and the Aggregate Exercise Price.

"IPO" means the Company's first underwritten public offering of its Common Stock under the Securities Act.

"**Liquidity Event**" means any liquidation, dissolution, or winding up of the Company, whether voluntary or involuntary, or an Initial Public Offering (IPO) or sale of the Company by either stock or assets that is at least a change of control transaction.

"**Person**" means any individual, sole proprietorship, partnership, limited liability company, corporation, joint venture, trust, incorporated organization or government or department or agency thereof.

"**Termination Date**" means the date the Warrant expires, unless exercised earlier as provided herein, and such date being 5:00 p.m., New York City time, on the twentieth (20^{th}) anniversary of the date hereof.

"**Warrant**" means this Warrant and all warrants issued upon division or combination of, or in substitution for, this Warrant.

"**Warrant Shares**" means the shares of Common Stock purchasable upon exercise of this Warrant in accordance with the terms of this Warrant. 2. Term of Warrant. Subject to the terms and conditions hereof, the Holder may only exercise this Warrant, in whole or in part, for the Warrant Shares purchasable hereunder during the Exercise Period. The "**Exercise Period**" shall be from the Liquidity Event until the Termination Date. In the event that the Company is a party to a Liquidity Event or otherwise has knowledge thereof, the Company shall provide advance written notice thereof to Holder. 3. Exercise of Warrant.

(a) **Exercise Procedure**. This Warrant may be exercised, in whole or in part, at the option of the Holder, on any Business Day during the Exercise Period, for the Warrant Shares, upon:

(i) surrender of this Warrant to the Company at its then principal executive offices (or an indemnification undertaking with respect to this Warrant in the case of its loss, theft or destruction), together with an Exercise Agreement in the form attached hereto as **Exhibit A** (an "**Exercise Agreement**"), duly completed (including specifying the number of Warrant Shares to be purchased) and executed; and

(ii) payment to the Company of the Aggregate Exercise Price in accordance with **Section 3(b)**.

(b) **Payment of the Aggregate Exercise Price**. Payment of the Aggregate Exercise

Price shall be made, at the option of the Holder, by either of the following methods:

(i) delivery to the Company of a certified or official bank check payable to the order of the Company or by wire transfer of immediately available funds to the following account of the Company: HSBC Bank USA NA, 120 Broadway, New York NY 10271, USA, Fed ABA Routing # 021001088, SWIFT Code # MRMDUS 33, Account #221049207 (Stream TV Networks, Inc.) or otherwise to an alternative account designated in writing in advance by the Company, in the amount of such Aggregate Exercise Price; or

(ii) by instructing the Company to issue Warrant Shares then issuable upon exercise of all or any part of this Warrant on a net basis such that, without payment of any cash consideration or other immediately available funds, the Holder shall surrender this Warrant in exchange for the number of Warrant Shares as is computed using the following formula:

$$X = Y (A - B) \div A$$

Where
:

X = the number of Warrant Shares to be issued to the Holder.

Y = the total number of Warrant Shares for which the Holder has elected to exercise this Warrant pursuant to Section 3(a).

A = the fair market value of one Warrant Share as of the applicable Exercise Date; whereby for purposes of this section "fair market value" shall be defined as (i) the average of the closing sale prices of the Common Stock for the five (5) trading days immediately prior to (but not including) the Exercise Date in the event that the Company's Common Stock is traded on an exchange or is quoted on an over the counter market, or in the absence of a trading market for the Common Stock, then (ii) as the Holder and the Company agree, or in the absence of such an agreement, by arbitration in accordance with the rules then standing of the American Arbitration Association, before a single arbitrator to be chosen from a panel of persons qualified by education and training to pass on the matter to be decided

B = the Exercise Price in effect under this Warrant as of the applicable Exercise Date.

(c) **Delivery of Stock Certificates**. Upon receipt by the Company of the Exercise Agreement, surrender of this Warrant and payment of the Aggregate Exercise Price (in

accordance with **Section 3(b)** hereof), the Company shall, as promptly as practicable, and in any event within three (3) Business Days thereafter, execute (or cause to be executed) and deliver (or cause to be delivered) to the Holder a certificate or certificates representing the Warrant Shares issuable upon such exercise. The stock certificate or certificates so delivered shall be, to the extent possible, in such denomination or denominations as the exercising Holder shall reasonably request in the Exercise Agreement and shall be registered in the name of the Holder or, subject to compliance with **Section 4** below, such other Person's name as shall be designated in the Exercise Agreement. This Warrant shall be deemed to have been exercised and such certificate or certificates of Warrant Shares shall be deemed to have been issued, and the Holder or any other Person so designated to be named therein shall be deemed to have become a holder of record of such Warrant Shares for all purposes, as of the Exercise Date.

(d) **Fractional Shares**. The Company shall not be required to issue a fractional Warrant Share upon exercise of any Warrant. As to any fraction of a Warrant Share that the Holder would otherwise be entitled to purchase upon such exercise, the Company shall pay to such Holder an amount in cash (by delivery of a certified or official bank check or by wire transfer of immediately available funds) equal to the product of (i) such fraction multiplied by (ii) the Exercise Price of one Warrant Share on the Exercise Date.

(e) **Valid Issuance of Warrant and Warrant Shares**. With respect to the exercise of this warrant, the Company hereby represents, covenants and agrees that:

(i) This Warrant is duly authorized and validly issued. (ii) All Warrant Shares issuable upon the exercise of this Warrant pursuant to the terms hereof shall be, upon issuance, and the Company shall take all such actions as may be necessary or appropriate in order that such Warrant Shares are, validly issued, fully paid and non-assessable.

(f) **Conditional Exercise**. Notwithstanding any other provision hereof, if an exercise of this Warrant is to be made in connection with a Liquidity Event, such exercise may at the election of the Holder be conditioned upon the consummation of such Liquidity Event, in which case such exercise shall not be deemed to be effective until immediately prior to the consummation of such Liquidity Event.

(g) **Reservation of Shares**. Immediately prior to the exercise of this Warrant, the Company shall reserve and keep available out of its authorized but unissued Common Stock, solely for the purpose of issuance upon the exercise of this Warrant, the maximum number of Warrant Shares issuable upon the exercise of this Warrant, and the par value per Warrant Share shall at all times be less than or equal to the Exercise Price. The Company shall not increase the par value of any Warrant Shares receivable upon the exercise of this Warrant above the Exercise Price then in effect and shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid

and non-assessable shares of Common Stock upon the exercise of this Warrant.

(h) **Adjustment of Exercise Price.** In the event of changes in the outstanding Common Stock by reason of stock dividends, split-ups, recapitalizations, reclassifications, combinations or exchanges of shares, separations, reorganizations, liquidations, or the like, the number and class of shares available under the Warrant in the aggregate and the Exercise Price shall be correspondingly adjusted to give the Holder of the Warrant, on exercise for the same aggregate Exercise Price, the total number, class, and kind of shares as the Holder would have owned had the Warrant been exercised prior to the event and had the Holder continued to hold such shares until after the event requiring adjustment. The form of this Warrant need not be changed because of any adjustment in the number of Warrant Shares subject to this Warrant. Prompt notice of any adjustment made pursuant to this **Section 3(h)** shall be given to the Holder.

(i) **Combination.** While this Warrant is outstanding, in the event of a Combination (as defined below), each Holder shall have the right to receive upon exercise of the Warrant the kind and amount of shares of capital stock or other securities or property which such Holder would have been entitled to receive upon or as a result of such Combination had such Warrant been exercised immediately prior to such event (subject to further adjustment in accordance with the terms hereof). In the event of a Combination in which the Company is not the surviving entity, the Company shall provide that the surviving or acquiring Person (the "Successor Company") in such Combination will assume by written instrument the obligations under this Section 3(i) and the obligations to deliver to the Holder such shares of stock, securities or assets as, in accordance with the foregoing provisions, the Holder may be entitled to acquire. "Combination" means an event in which the Company consolidates with, mergers with or into, or sells all or substantially all of its assets to another Person, where "Person" means any individual, corporation, partnership, joint venture, limited liability company, association, joint-stock company, trust, unincorporated organization, government or any agency or political subdivision thereof or any other entity.

(j) **Market Stand-Off**. Holder shall not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale in relation to, any Common Stock (or other securities) of the Company held by Holder, for a period of time specified by the managing underwriter(s) (not to exceed one hundred eighty (180) days following the effective date of a registration statement of the Company filed under the Securities Act. Holder agrees to execute and deliver such other agreements as may be reasonably requested by the Company and/or the managing underwriter(s) which are consistent with the foregoing or which are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to such Common Stock (or other securities) until the end of such period. As a pre-condition

to any proposed transfer of this Warrant or any Common Stock issued hereunder, any proposed transferee of the Holder (or any subsequent transferee of this Warrant or any such shares of Common Stock) will be required to agree to the terms of this **Section 3(i)** and the Company may refuse to recognize or register and purported transfer that is not made in compliance with the terms hereof. 4. Transfer of Warrant. This Warrant shall not be transferred (in whole or in part) without the prior written consent of the Company, which consent shall not be unreasonably withheld.

5. Holder Not Deemed a Stockholder; Limitations on Liability. Except as otherwise specifically provided herein, prior to the issuance to the Holder of the Warrant Shares to which the Holder is then entitled to receive upon the due exercise of this Warrant, the Holder shall not be entitled to vote or receive dividends or be deemed the holder of shares of capital stock of the Company for any purpose by virtue of being the Holder of this Warrant alone, nor shall anything contained in this Warrant be construed to confer upon the Holder, as such, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

6. Replacement on Loss; Division and Combination.

(a) **Replacement of Warrant on Loss**. Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and upon delivery of an indemnity reasonably satisfactory to the Company and, in case of mutilation, upon surrender of such Warrant for cancellation to the Company, the Company, at the Holder's expense, shall execute and deliver to the Holder, in lieu hereof, a new Warrant of like tenor and exercisable for the same number of Warrant Shares as the Warrant so lost, stolen, mutilated or destroyed; provided, that, in the case of mutilation, no indemnity shall be required if this Warrant in identifiable form is surrendered to the Company for cancellation.

(b) **Division and Combination of Warrant**. Subject to compliance with the applicable provisions of this Warrant as to any transfer or other assignment which may be involved in such division or combination, this Warrant may be divided or, following any such division of this Warrant, subsequently combined with other Warrants, upon the surrender of this Warrant or Warrants to the Company at its then principal executive offices, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the respective Holders or their agents or attorneys. Subject to compliance

with the applicable provisions of this Warrant as to any transfer or assignment which may be involved in such division or combination, the Company shall, at the Company's expense, execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants so surrendered in accordance with such notice. Such new Warrant or Warrants shall be of like tenor to the surrendered Warrant or Warrants and shall be exercisable in the aggregate for the same number of Warrant Shares as the Warrant or Warrants so surrendered in accordance with such notice.

7. Warrant Register. The Company shall keep and properly maintain at its principal executive offices books for the registration of the Warrant and any transfers thereof. The Company may deem and treat the Person in whose name the Warrant is registered on such register as the Holder thereof for all purposes, and the Company shall not be affected by any notice to the contrary, except any assignment, division, combination or other transfer of the Warrant effected in accordance with the provisions of this Warrant.

8. Notices. All notices, requests, consents, claims, demands, waivers and other communications hereunder shall be in writing.

9. Cumulative Remedies. The rights and remedies provided in this Warrant are cumulative and are not exclusive of, and are in addition to and not in substitution for, any other rights or remedies available at law, in equity or otherwise.

10. Equitable Relief. Each of the Company and the Holder acknowledges that a breach or threatened breach by such party of any of its obligations under this Warrant would give rise to irreparable harm to the other party hereto for which monetary damages would not be an adequate remedy and hereby agrees that in the event of a breach or a threatened breach by such party of any such obligations, the other party hereto shall, in addition to any and all other rights and remedies that may be available to it in respect of such breach, be entitled to equitable relief, including a restraining order, an injunction, specific performance and any other relief that may be available from a court of competent jurisdiction.

11. Entire Agreement. This Warrant constitutes the sole and entire agreement of the parties to this Warrant with respect to the subject matter contained herein, and supersedes all prior and contemporaneous understandings and agreements, both written and oral, with respect to such subject matter. In the event of any inconsistency between the statements in the body of this Warrant and the Subscription Agreement, the statements in the body of this Warrant shall control.

12. Successor and Assigns. This Warrant and the rights evidenced hereby shall be binding upon and shall inure to the benefit of the parties hereto and the successors of the Company and the successors and permitted assigns of the Holder. Such successors and/or permitted

assigns of the Holder shall be deemed to be a Holder for all purposes hereunder.

13. No Third-Party Beneficiaries. This Warrant is for the sole benefit of the Company and the Holder and their respective successors and, in the case of the Holder, permitted assigns and nothing herein, express or implied, is intended to or shall confer upon any other Person any legal or equitable right, benefit or remedy of any nature whatsoever, under or by reason of this Warrant.

14. Headings. The headings in this Warrant are for reference only and shall not affect the interpretation of this Warrant.

15. Amendment and Modification; Waiver. Except as otherwise provided herein, this Warrant may only be amended, modified or supplemented by an agreement in writing signed by each party hereto. No waiver by the Company or the Holder of any of the provisions hereof shall be effective unless explicitly set forth in writing and signed by the party so waiving. No waiver by any party shall operate or be construed as a waiver in respect of any failure, breach or default not expressly identified by such written waiver, whether of a similar or different character, and whether occurring before or after that waiver. No failure to exercise, or delay in exercising, any rights, remedy, power or privilege arising from this Warrant shall operate or be construed as a waiver thereof; nor shall any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege.

16. Severability. If any term or provision of this Warrant is invalid, illegal or unenforceable in any jurisdiction, such invalidity, illegality or unenforceability shall not affect any other term or provision of this Warrant or invalidate or render unenforceable such term or provision in any other jurisdiction.

17. Governing Law. This Warrant shall be governed by and construed in accordance with the internal laws of the State of Delaware USA without giving effect to any choice or conflict of law provision or rule (whether of the State of Delaware USA or any other jurisdiction) that would cause the application of laws of any jurisdiction other than those of the State of Delaware USA.

18. Submission to Jurisdiction. Any legal suit, action or proceeding arising out of or based upon this Warrant or the transactions contemplated hereby may be instituted in the federal courts of the United States of America or the courts of the State of Delaware in each case located in the city of Wilmington, and each party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by certified or registered mail to such party's address

set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or any proceeding in such courts and irrevocably waive and agree not to plead or claim in any such court that any such suit, action or proceeding brought in any such court has been brought in an inconvenient forum.

19. Waiver of Jury Trial. Each party acknowledges and agrees that any controversy which may arise under this Warrant is likely to involve complicated and difficult issues and, therefore, each such party irrevocably and unconditionally waives any right it may have to a trial by jury in respect of any legal action arising out of or relating to this Warrant or the transactions contemplated hereby.

20. No Strict Construction. This Warrant shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting an instrument or causing any instrument to be drafted.

[Signature appears on following page.]

IN WITNESS WHEREOF, the Company has duly executed this Warrant on the Original Issue Date.

STREAM TV NETWORKS, INC.

By: ______________________
Name: Raja Rajan
Title: Chief Operating Officer

EXHIBIT A

FORM OF EXERCISE AGREEMENT

TO: STREAM TV NETWORKS, INC.

ATTENTION:
LEGAL

(1) The undersigned hereby elects to purchase _________ shares of the Common Stock of Stream TV Networks, Inc. (the "**Company**") pursuant to the terms of the attached Warrant, and tenders herewith payment of the Exercise Price in full, together with all applicable transfer taxes, if any.

- OR -

The undersigned hereby elects to purchase _________ shares of the Common Stock of the Company pursuant to the terms of the net exercise provisions set forth in **Section 3(b)(ii)** of the attached Warrant, and shall tender payment of all applicable transfer taxes, if any.

(2) Please issue a certificate or certificates representing said shares of Common Stock in the name of the undersigned or in such other name as is specified below:

____
(Name)

____
____
(Address)

(3) The undersigned represents that (i) the aforesaid shares of Common Stock are being acquired for the account of the undersigned for investment and not with a view to, or for resale in connection with, the distribution thereof and that the undersigned has no present intention of distributing or reselling such shares; (ii) the undersigned is aware of the Company's business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision regarding its investment in the Company; (iii) the undersigned is experienced in making investments of this type and has such knowledge and background in financial and business matters that the undersigned is capable of evaluating the merits and risks of this investment and protecting the undersigned's own interests; (iv) the undersigned understands that the shares of Common Stock issuable upon exercise of this Warrant have not been registered under

the Securities Act of 1933, as amended (the "**Securities Act**"), by reason of a specific exemption from the registration provisions of the Securities Act, which exemption depends upon, among other things, the bona fide nature of the investment intent as expressed herein, and, because such securities have not been registered under the Securities Act, they must be held indefinitely unless subsequently registered under the Securities Act or an exemption from such registration is available; (v) the undersigned is aware that the aforesaid shares of Common Stock may not be sold pursuant to Rule 144 adopted under the Securities Act unless certain conditions are met and until the undersigned has held the shares for the number of years prescribed by Rule 144, that among the conditions for use of the Rule is the availability of current information to the public about the Company and the Company has not made such information available and has no present plans to do so; and (vi) the undersigned agrees not to make any disposition of all or any part of the aforesaid shares of Common Stock unless and until there is then in effect a registration statement under the Securities Act covering such proposed disposition and such disposition is made in accordance with said registration statement, or the undersigned has provided the Company with an opinion of counsel satisfactory to the Company, stating that such registration is not required.

(Date) (Signature)

(Print name)

Exhibit B

(Standard Products)

Exhibit B

(Standard Products)

streamTV NETWORKS

65" 8KL 16 Million Pixel Landscape Mode Ultra-D Display

We think the final customer will want these specs once they make it as final goods for the commercial industry.

Feature	Description
Panel Features: 2D mode* *From 2D Panel Spec	• 65" 16 Million Pixel TFT LCD with LED Backlight • Landscape Mode Display • Supports 4320 x 3840@60Hz • Displays up to 10-bit 1.07 Billion Colors • High Brightness up to 500cd/m2 • Ultra-High contrast ratio (4000:1)
Panel Features: 3D mode	• Proprietary Ultra-D 3D Optical System delivers a Seamless Viewing Experience • Proprietary Rendering Module delivers Ultra-D converted content up to 3D Full UHD with High Brightness up to 350 nits • Real Time Conversion technology enables playback of legacy content to Glasses Free 3D • Horizontal 3D Viewing Angle: 90° • Vertical 3D Viewing Angle: 40° • User Adjustable Depth Control • Software Switchable 2D/3D • Optimum viewing distance 3 – 5 Meters
HDMI Input Resolutions, Framerates and Formats	• HDMI 1.4 and 2.1 Compatible • HDCP 1.4 and 2.1 Support • 480p60, 576p50, 720p50, 720p60, 720p60 3DFP, 1080p24, 1080p60, 1080p24 3DFP, 480i60, 576i50, 1080i50, 1080i60, 4K30, 4K60, 8K60 • Supports 2D & 3D Stereo (Top/Bottom & Side by Side & Frame Packed)
Wireless Connectivity	• Wi-Fi 802.11ac, BT to Support NFC, RS232
Real Time Video Conversion (Via HDMI)	• Manually configurable for 2D-as-2D, 2D to Ultra-D, and 3D Stereo to Ultra-D (Top/Bottom & Side by Side) • Automatic detection of 3D S/S Frame Packed
Content Playback	• HDMI, USB, LAN or WiFi
Event Logging	• Playlist status • Software update status • Monitor/Display Status
Remote Control	• IR Based
User interface	• On Screen Key Guide
Software Update	• Software update via USB, Ethernet or Wi-Fi
I/O	• 2X USB, 3X HDMI 1.4a/2.1, • 1X RJ45, RS232, 1X 3.5mm **Stereo** Audio O/P
Status Indicators	• Power Off/On/Sleep/Standby LED
Device Interactive Support	• CEC, Ethernet Control & Communications, RS232 Control
Region Allocation:	• China, NA, SA, EU, India, Mid East
Power Requirements	• 110~240V, Sleep Mode, Standby Mode
Other	• RoHs compliant
Certifications	• UL, C-UL, FCC, CE, CCC
Warranty	• 1-year commercial warranty
Display Dimensions/Wt.	• TBD

Specifications [c]

Feature	Description
Panel Features: 2D mode* *From 2D Panel Spec	• Color Active Matrix TFT Module • 4K (H:3840 x V:2160) 15.6" Display • Component Depth: 8-Bit 16.7M Colors • Pixel Arrangement: RGB Vertical Stripe • Pixel Density:285 PPI • Contrast Ratio: 1000:1 • Brightness: 300 nit
Ultra-D™ Module Features [a]	• Proprietary Ultra-D™ Glasses Free 3D Optical Stack • Proprietary Ultra-D™ Glasses Free 3D Rendering • Horizontal 3D Viewing Angle: 120° • Vertical 3D Viewing Angle: 40° • Optimum viewing distance 35mm to 42mm
Viewing Orientation	• Ultra-D™: Horizontal • 2D Horizontal
Module Thickness	•
Module Input	• VESA eDP Interface
Module Power Draw	• ASIC: • IP:
Region Allocation:	•
Certifications	•
Module Dimensions/Wt.	•

(a) Ultra-D™ Feature
(b) Optional Ultra-D™ Feature
(c) Subject to Change

streamTV NETWORKS

15.6" Ultra-D™ Glasses-Free 3D Display Module Brief

General Description:

The 15.6" Ultra-D™ Glasses-Free 3D Display Module incorporates a 15.6" 4K TFT Panel integrated with Stream TV Networks Ultra-D™ 3D Optical Stack and Proprietary Ultra-D™ 3D Rendering technology.

Target Use Cases

- Consumer Gaming Entertainment Product such as a Laptop or Mini PC
- Commercial Digital Signage Display for Kiosk or a Small Footprint Requirement

Optimal Viewing

- 35cm – 42cm

Deliverable Implementations (c)

- Optics & IP
  Optics: Display panel with StreamTV™ proprietary lens
  IP: TSMC (10 or 7 nm), or Hard Macro

EFiled: Oct 21 2022 02:41PM EDT
Transaction ID 68288444
Case No. 2020-0766-JTL

EXHIBIT 7

CONFIDENTIAL

TECHNOLOGY LICENSE AGREEMENT

This Technology License Agreement ("the Agreement") is entered into on May 1, 2010 ("the Effective Date") by and between Koninklijke Philips Electronics N.V., a Dutch corporation, having its registered office in Eindhoven, The Netherlands ("Philips") and 3DFusion Corporation, a Delaware corporation, having its registered office at 110 Wall Street, Suite 7-2, New York, NY 10005, United States of America ("3D Fusion").

In this Agreement, Philips and 3D Fusion are also referred to individually as a "Party" and collectively as the "Parties".

RECITALS

A. Philips has developed and/or owns certain technology and software related to 3D Technology.

B. Philips has developed valuable 3D Know-How and owns certain Intellectual Property Rights relevant to the 3D Technology.

C. 3D Fusion wishes to develop, manufacture and sell or otherwise dispose of 3D Displays, 3D Rendering Boxes, 3D Content Creation Tools and to provide 3D Content Services based on the 3D Technology.

D. On December 11, 2009 the Parties entered into a Confidentiality and Non-Disclosure Agreement covering the disclosure and exchange of confidential information in connection with the possible licensing by Philips of its 3D Technology to 3D Fusion.

E. 3D Fusion has requested from Philips a license under Philips' Intellectual Property Rights relating to the 3D Technology and has further requested Philips to disclose and make available 3D Know-How and software relating to the 3D Technology in order to enable 3D Fusion to develop, manufacture and sell or otherwise dispose of Licensed Products and 3D Content Services.

F. Philips is willing to grant 3D Fusion a license under the relevant Intellectual Property Rights and to disclose and make available 3D Know-How and software relating to the 3D Technology on the terms and conditions set forth in this Agreement.

The Parties hereby agree as follows:

1. DEFINITIONS

The following terms when used in this Agreement shall have the meanings ascribed thereto below:

"3D Display" means an auto-stereoscopic display configured to display images which a viewer perceives to be images extending in three dimensions that incorporates and/or that otherwise requires, the utilization of the Licensed Technology.

"3D Content Creation Tools" means software that incorporates and/or that otherwise requires, the utilization of the Licensed Technology, and which: (a) converts a two-dimensional content format (picture and / or video) into a content format that includes depth information and/or (b) renders a content format with depth information into a multiview content format suitable for playing on a 3D Display.

"3D Content Services" means all business activities of 3D Fusion and / or its Affiliates, that incorporate, and/or that otherwise require the utilization of the Licensed Technology, where within the framework of a service model, 3D applications are provided to its customers or to third parties on behalf of its customers, including, without limitation, manufacturing, installing and operating 3D systems and providing content to be displayed on such systems, but excluding per-unit sales of 3D Displays and 3D Rendering Boxes. For the avoidance of any doubt, the parties agree that 3D Content Services shall not include any business activities of 3D Fusion, where within the framework of a service model, 3D applications are provided to its customers or to third parties on behalf of its customers, including, without limitation, manufacturing, installing and operating 3D systems and providing content to be displayed on such systems, but which do not incorporate, and/or which do not otherwise utilize the Licensed Technology.

"3D Know-How" means technical information (tangible or intangible), whether in the form of unpatented inventions, drawings, algorithms, formulas, documents, product designs, procedures or methods, or current and accumulated skills or experience acquired (or which after the Effective Date may be acquired) by Philips in the field of 3D Technology which is owned or controlled by Philips. 3D Know-How includes but is not limited to designs and technical information listed in Schedule B.

"3D Rendering Boxes" means a hardware device, that incorporates and/or that otherwise requires, the utilization of the Licensed Technology, and that is meant to be connected to a 3D Display and capable of rendering multiview content out of 2D or 2D+depth content (pictures and/or video).

"3D Technology" means the field of 3D lenticular display design (including lens design, lens manufacturing, 3D module manufacturing, and 3D processing), 3D content creation, 3D formats (including 2D + depth) as developed by Philips, and that incorporates and/or that otherwise requires, the utilization of the Licensed Technology.

"Affiliate(s)" means any one or more legal entities: (i) owned or controlled by Philips or 3D Fusion, (ii) owning or controlling Philips or 3D Fusion, or (iii) owned or controlled by the legal entity owning or controlling Philips or 3D Fusion, but any such legal entity shall only be considered an Affiliate of Philips or 3D Fusion for as long as such ownership or control exists. For the purposes of this definition, a legal entity shall be deemed to own or to control another legal entity if more than 50% (fifty per cent) of the voting stock of the latter legal entity, ordinarily entitled to vote

in the meetings of shareholders of that entity (or, if there is no such stock, more than 50% (fifty per cent) of the ownership of or control in the latter legal entity) is held directly or indirectly by the owning or controlling legal entity.

"Agreement" means this Technology License Agreement between Philips and 3D Fusion, dated May 1, 2010, and includes any Schedules or Exhibits hereto and any permitted amendments to the main part of this Technology License Agreement or any Schedule or Exhibit hereto.

"Due Diligence Period" means the period following execution of this Agreement during which 3D Fusion shall perform the necessary due diligence on the Licensed Technology, as defined below, and shall be the earliest of: completion of the due diligence on the Licensed Technology, or forty five (45) days.

"Executable Code" means any part or all of the machine-executable version of the Licensed Software, which results from compiling the Source Code into Object Code and linking, loading or assembling (or other similar process), as required, the Object Code into machine language, executable form.

"Improvements" shall mean findings, improvements, enhancements, discoveries, inventions, additions, modifications, formulations, derivative works, or changes (whether or not patented or patentable) with respect to the Licensed Patents/Licensed Know-How developed by 3D Fusion or its Affiliates after execution of this Agreement and including but not limited to any Modification of the Licensed Software, that, with respect to Improvements to Licensed Know-How, could not have been created and/or developed without access to the Licensed Know-How made possible under this Agreement, and that, with respect to Improvements to Licensed Patents, are directed to any products, product components, or processes that could not be utilized in provision of any commercial products and/or services, without such products and/or services infringing at least one of the Licensed Patents.

"Intellectual Property Rights" means Patents, utility certificates, utility models, design rights, copyrights, database rights and all registrations, applications, renewals, extensions, combinations, divisions, continuations or reissues of any of the foregoing.

"Licensed Know-How" means the (technical) information (including trade secrets if applicable but excluding the Licensed Patents), drawings and other material relevant to the development and / or manufacture of 3D Displays, 3D Rendering Boxes and 3D Content Creation Tools, owned or controlled by Philips and which Philips is free to disclose and license without any obligation for payment or other consideration to a third party at the Effective Date, as specified in Schedule B.

"Licensed Patents" means: (a) the Patents owned by Philips as of the Effective Date as listed in Schedule A and, (b) any Patents which are filed within 3 years of the Effective Date, provided that: (i) the patentable subject matter of such Patents is directly related to 3D Technology and where the invention results directly from research and development activities funded by Philips Intellectual Property & Standards and further provided that, in respect of both (a) and (b), Philips has the free right to license such Patents, not requiring payment or other consideration to any third

party and that such Patents have not been and are not to be submitted to and included in a patent pool supporting an international accepted standard (e.g. BD, HDMI, MPEG). Upon written request of 3D Fusion, Philips will amend Schedule A to insert therein such additional Licensed Patents under (a) and (b) above, and to provide written notice of each such amendment to 3D Fusion in a commercially reasonable time, but not greater than after sixty (60) days following such request.

"Licensed Products" means 3D Displays, 3D Rendering Boxes and 3D Content Creation Tools boxes to be developed, manufactured, sold or otherwise disposed of by 3D Fusion incorporating or using any of the Licensed Patents, Licensed Software or Licensed Know-How and in accordance with the provisions hereof.

"Licensed Software" means the software provided by Philips to 3D Fusion as further described in Schedule B, and all copies or derivative works thereof that were created by Philips, or by any third party for the benefit of Philips.

"Licensed Technology" shall mean the Licensed Patents, Licensed Know-How and Licensed Software.

"Modification" means any reconfiguration, alteration, enhancement, translation, transformation or other derivative work of the Licensed Software.

"Object Code" means all or any portion of the machine-readable or machine language version of the Licensed Software.

"Open Source Software" means any software that is licensed under Open Source License Terms. As illustrative examples, any software under any version of the GNU General Public License, the GNU Lesser General Public License, the Mozilla Public License, the Berkeley Software Distribution (BSD) license, the Apache Software License and the MIT/X11 license are regarded as Open Source Software.

"Open Source License Terms" means the terms in any license that require as a condition of use, modification and/or distribution of a work:

(a) the making available of source code or other materials preferred for modification, or

(b) the granting of permission for creating derivative works, or

(c) the reproduction of certain notices or license terms in derivative works or accompanying documentation, or

(d) the granting of a royalty-free license to any party under intellectual property rights regarding the work and/or any work that contains, is combined with, requires or otherwise is based on the work.

"Patent(s)" means any and all patents (including but not limited to patents of implementation, improvement, or addition, utility model and appearance design patents, and inventors certificates, as well as divisions, reissues, continuations, renewals, and extensions of any of these), applications for patents, and patents that may issue on such applications.

"Royalty Reporting Form" means a written statement in the form as attached hereto as Schedule D, signed by a duly authorized officer on behalf of 3D Fusion.

"Source Code" means the compilable and/or human-readable version of the Licensed Software, including without limitation, all comments and procedural code, associated flow charts, concepts, algorithms, technology and other written instructions.

2. GRANT OF RIGHTS

2.1 Subject to 3D Fusion's compliance with its obligations under this Agreement, for the breach of which, Philips has the right of termination thereof under Section 5.2, below, Philips hereby grants to 3D Fusion and its Affiliates, during the term of this Agreement, a worldwide non-exclusive, non-transferable license, without the right to grant sub-licenses, under the Licensed Patents and the Licensed Know-How to: (a) use, sell, offer to sell, import, export, and otherwise dispose of the Licensed Products, and (b) lease, operate or otherwise make available to customers thereof, the Licensed Products, including the right to utilize any Licensed Products to provide services relating to 3D Content Services to any third party.

The rights granted to 3D Fusion pursuant to this Section 2.1 include the right for 3D Fusion to have Licensed Products manufactured in whole or in part by a third party manufacturer, provided that:

(i) 3D Fusion notifies Philips of the grant of such right to manufacture;
(ii) 3D Fusion will properly identify such third party manufacturer, the specific manufacturing facility(ies) and location(s);
(iii) 3D Fusion will indicate the quantities of Licensed Products so manufactured and purchased in the Royalty Reporting Form to be submitted to Philips hereunder; and
(iv) 3D Fusion warrants that it has entered into a legally binding arrangement with such third party manufacturer whereby such third party manufacturer is bound to the same confidentiality obligations, as well as the undertaking not to 'reverse engineer', as set forth in this Agreement.

3D Fusion acknowledges and accepts that any breach by the third party manufacturer of the applicable obligations that directly results from a breach by 3DF Fusion of the warranty under Section 2.1(iv), shall be considered a breach by 3D Fusion under this Agreement, which 3D Fusion will have full opportunity to cure in accordance with the applicable terms and conditions thereof.

2.2 Subject to 3D Fusion's compliance with its obligations under this Agreement, for the breach of which, Philips has the right of termination thereof under Section 5.2, below, Philips hereby grants to 3D Fusion and its Affiliates, a non-exclusive, non-transferable license under the Licensed Software to:

a. test, evaluate, and make derivative works of the Source Code portions of the Licensed Software and to compile such Source Code portions and derivative works thereof into Object Code, solely as strictly necessary to achieve, or to enhance, interoperability between the Licensed Software (including any Modification thereof) and the subsequent integration of the Licensed Software (including any Modification thereof) in the Licensed Products;

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b. test, evaluate, and reproduce the Object Code portions of the Licensed Software for integration of the Licensed Software (including any Modification thereof), in Executable Code form only, in the Licensed Products;

c. test, demonstrate, license or otherwise commercially exploit the Licensed Products to its customers, for subsequent distribution to, and ultimate use thereof by end-users;

d. maintain and support Licensed Products sold or licensed to its customers, including, but not limited to, by performing error-correction and/or technical support on the Licensed Software (including any Modification thereof) integrated in these Licensed Products, and by testing and evaluating the integrated Licensed Software; and

e. make as many copies of the Licensed Software (including any Modification thereof) as reasonably required for exercise of the rights granted under this Agreement.

2.3 The rights granted to 3D Fusion hereunder shall include the right of any 3D Fusion customer to use the Licensed Software (including any Modification thereof) integrated in Executable Code form only for its own personal use or within its normal business operations, and such right of use shall survive the expiration or termination of this Agreement.

2.4 3D Fusion acknowledges that it has been informed by Philips that the Licensed Software contains certain Open Source Software and that there may be Open Source Software that has not been specifically identified to 3D Fusion. 3D Fusion shall be solely responsible for compliance with any and all applicable Open Source License Terms.

Specifically, but without limitation, 3D Fusion shall ensure that appropriate notices are included in documentation and that source code is delivered to all those to whom 3D Fusion distributes the software where the license provisions of such Open Source Software so require.

2.5 3D Fusion further acknowledges that it has been informed by Philips that the Licensed Software operates in combination with certain commercial software, developed and owned by third parties and that there may be third party commercial software that has not been specifically identified to 3D Fusion. 3D Fusion shall be solely responsible for compliance with any and all applicable licence terms and of any such third party commercial software (including, without limitation, payment of royalties, if applicable).

2.6 It is expressly acknowledged and agreed that the Licensed Software is licensed to 3D Fusion and not sold. It is further acknowledged and agreed that Philips owns and shall continue to own all rights, title and interest in the Licensed Software, as well as all derivative works of each of the foregoing that were created by Philips, or by any third party for the benefit of Philips, except as expressly set forth otherwise in this Agreement. 3D Fusion shall take all reasonable measures to protect Philips'

(intellectual) property rights in at least the same way as 3D Fusion protects its own rights, but shall have no obligation whatsoever to take any affirmative action to enforce any intellectual property and/or related rights granted thereto under this Agreement. Other than the limited license granted to 3D Fusion hereunder, no other right or license under any intellectual property rights of Philips and/or its Affiliates or any intellectual property residing in the Licensed Software is granted and any implied licenses are expressly excluded.

2.7 To the maximum extent permitted by applicable law, 3D Fusion shall not, and shall not permit any third party under its direction or control, to:

a. copy, reproduce or distribute Licensed Software (including any Modification thereof), other than in a form incorporated in Licensed Products or 3D Content Services as specifically permitted under this Agreement;
b. assign, sub-license, lease, rent, loan, transfer, disclose, or otherwise make available the Licensed Software other than in a form incorporated in Licensed Products, or in 3D Content Services (including any Modification thereof), and/or as otherwise specifically permitted under this Agreement; or
c. remove or circumvent the protection of the Licensed Software.

2.8 3D Fusion shall not perform any actions with regard to the Licensed Software in a manner that would require the Licensed Software or any derivative work thereof to be licensed under Open Source License Terms. These actions shall include without limitation:

(a) combining the Licensed Software or a derivative work thereof with Open Source Software, by means of incorporation or linking or otherwise; or
(b) using Open Source Software to create a derivative work of the Licensed Software.

2.9 3D Fusion shall not remove or alter any copyright notices or other proprietary rights notices, legends or marking(s) contained in or affixed to the Licensed Software provided hereunder (including any Modifications thereof). 3D Fusion shall reproduce such notices, legends and marking(s) and shall affix such notices, legends and marking(s) to any and all media containing a copy or any portion of the Licensed Software provided hereunder (including any Modifications thereof), in the same manner as these were affixed to the original media.

2.10 3D Fusion shall not make, nor permit its customers to make, or publish any representations, warranties, or guarantees on behalf of Philips, its Affiliates and/or its third party suppliers/licensors in relation to the Licensed Software without Philips' express prior written consent.

2.11 In the event that 3D Fusion owns any intellectual property rights relevant to the Licensed Technology ("3DF IP Rights"), 3D Fusion undertakes that, upon the request of Philips, unless doing so would conflict with then-existing obligations of 3D Fusion to any third party, it will negotiate in good faith with Philips and or its Affiliates for a license under such 3DF IP Rights on commercially reasonable, non-discriminatory terms and to use such 3DF IP Rights in the exploitation of the Licensed Technology (including Improvements thereof). For avoidance of any doubt, 3DF IP Rights shall

be considered relevant to the Licensed Technology, if the 3DF IP Rights are directed to creation of new products based thereon that are intended for being utilized in conjunction with the Licensed Products, but: (a) that could have been created and/or developed without need for access to the Licensed Know-How made possible under this Agreement, and/or (b) that do not in themselves infringe any of the Licensed Patents.

2.12 3D Fusion shall notify Philips promptly of any Improvement(s) to the Licensed Technology. In consideration of the undertaking set forth in Section 2.1, 3D Fusion agrees to grant to Philips and its Affiliates a non-exclusive non-transferable, non-sublicensable license, to use the licensed Improvements and to develop, manufacture, license, sell or otherwise dispose of any Licensed Products embodying such Improvement(s) to the Licensed Technology or manufactured using any such Improvement(s), on commercially reasonable non-discriminatory terms.

2.13 Philips shall exclude any abandoned pending Patent applications and any abandoned Licensed Patents from Schedule A.

3. DELIVERY OF LICENSED KNOW-HOW AND LICENSED SOFTWARE

3.1 Upon receipt by Philips of the first instalment of the amount specified in Section 4.1, Philips will make available the Licensed Know-How and Licensed Software to 3D Fusion in accordance with a jointly defined and mutually agreed hand-over plan. Such delivery may occur by means of access to a server, electronic transfer, delivery of a storage medium or by such other means as agreed by the Parties.

4. PAYMENT AND REPORTING

4.1 In consideration of the delivery of the Licensed Know-How and the Licensed Software, 3D Fusion shall make a non-refundable, non-recoupable payment of US$5,000,000 (five million US Dollars) to Philips, payable 50% within 45 days of the Effective Date, 25% by January 15, 2011 and 25% by November 15, 2011.

4.2 In further consideration of the rights granted hereunder by Philips to 3D Fusion, for all Licensed Products developed, manufactured, sold or otherwise disposed of as from January 1, 2013, 3D Fusion shall pay to Philips a royalty in accordance with the table set forth in Schedule C (a) on each Licensed Product manufactured, licensed or sold or otherwise disposed of, and (b) on each Licensed Product leased, operated for the benefit of, or otherwise made available to, customers thereof, as well as on 3D Content Services provided by 3D Fusion, with a minimum of €100,000 (one-hundred thousand Euros) per calendar year. If 3D Fusion fails to pay to Philips said minimum royalty for two consecutive calendar years, Philips may terminate this Agreement with thirty (30) days written notice to 3D Fusion, unless 3D Fusion remedies its failure to pay the minimum royalties due to Philips under this Agreement within said notice period. Such right to terminate shall be without prejudice to any other right or remedy Philips may have against 3D Fusion.

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Royalties shall be due and payable on all Licensed Products manufactured prior to, but remaining in stock at the date of expiration or termination of this Agreement. Within 30 days after expiration or termination of this Agreement 3D Fusion shall submit to Philips a Royalty Reporting Form stating the number of Licensed Products in stock at the time of expiration or termination of this Agreement.

4.4 All payments by 3D Fusion to Philips under this Agreement shall be made in US Dollars to the US Dollar account with:

CITIBANK in New York	
Bank Account No.:	406711-1001
in the name of:	Koninklijke Philips Electronics N.V. –Licenses
SWIFTCODE:	CITIUS33 021000089
Reference:	"3D Display Technology, LP25049"

(or such other bank account as Philips may specify)

4.5 Within 30 days following 31 March, 30 June, 30 September and 31 December of each year during the term of this Agreement, 3D Fusion shall submit to Philips (even in the event that no Licensed Products have been manufactured, licensed, sold or otherwise disposed of and that no 3D Content Services have been provided by 3D Fusion) a Royalty Reporting Form, duly completed and signed by an authorized representative of 3D Fusion.

4.7 3D Fusion shall pay the royalties due to Philips hereunder within 30 calendar days after the end of each calendar quarter during the term of this Agreement.

4.8 In no event shall 3D Fusion have the right to set off any payments due hereunder against any claim, of whatever nature, it or any of its Affiliates may have against Philips or any of Philips' Affiliates.

4.9 Any payment under this Agreement that is not made on or before the date(s) specified herein, shall accrue interest at the rate of 2% (two per cent) per month (or part thereof), or the maximum amount permitted by law, whichever is lower, without any notification being required.

4.10 Each Party shall bear its own costs, stamp duties, taxes and other similar levies arising from or in connection with this Agreement. In the event that the governmental authorities of any country imposes any withholding taxes on payments made by 3D Fusion to Philips hereunder and requires 3D Fusion to withhold such tax from such payments, 3D Fusion may deduct such tax from such payments. In such event, 3D Fusion shall promptly provide Philips with tax receipts issued by the relevant tax authorities.

4.11 3D Fusion shall submit to Philips, within 90 calendar days after the end of 3D Fusion's fiscal year, an audit statement, signed by its external auditors, who shall be qualified accounting professionals (preferably, certified public auditors), confirming that all quarterly royalty statements as submitted by 3D Fusion to Philips during the preceding fiscal year, are true, complete and accurate in every respect. The correctness of this audit statement may be verified by Philips by means of a work

paper review, conducted by one of the certified public auditors selected by Philips. 3D Fusion shall procure that its auditors provide full cooperation with said work paper review. This audit statement shall not affect the right of Philips to inspect the books and records of 3D Fusion from time to time in accordance with Section 4.12.

4.12 In order that the royalty statements provided for in this Section 4 may be verified, 3D Fusion shall keep complete and accurate books and records relating to the manufacture and sale or other disposal of Licensed Products and shall keep the books and records available for a period of 5 (five) years following the manufacture, sale or other disposal of each Product.

Philips shall have the right to inspect the books and records of 3D Fusion from time to time, in order to verify the correctness of the aforementioned royalty statements. Any such inspection shall take place no more than once per calendar year and shall be conducted by a certified public auditor appointed by Philips. Philips shall give 3D Fusion written notice of such inspection at least 14 calendar days prior to the inspection. 3D Fusion shall willingly co-operate and provide all such assistance in connection with such inspection as Philips and/or the auditor may require. The inspection shall be conducted at Philips' own expense, provided that, in the event that 3D Fusion has failed to submit royalty statements and/or yearly written statement(s) by its external auditors, as provided for in Section 4.11 and this Section 4.12 in respect of the period to which the inspection relates or in the event that any discrepancy or error of 3% (three per cent) or more of the monies actually due is established, the cost of the inspection shall be borne by 3D Fusion, without prejudice to any other claim or remedy as Philips may have under this Agreement or under applicable law.

4.13 Philips' right inspection as set out in Section 4.12 shall survive termination or expiration of this Agreement for 3 (three) years after termination or expiration of this Agreement.

4.14 Without limiting any other provision of this Agreement, 3D Fusion shall provide all relevant additional information as Philips may reasonably request from time to time, so as to enable Philips to ascertain that 3D Fusion has correctly paid the royalties on Licensed Products and 3D Content Services due hereunder.

4.15 Any information provided by 3D Fusion to Philips or its auditors under this Section 4 in writing and marked as Confidential shall be treated by Philips as confidential, save that the foregoing shall not prevent Philips from using such confidential information in connection with the enforcement of its rights under this Agreement.

5. TERM AND TERMINATION

5.1 This Agreement shall enter into force on the Effective Date and shall remain in force until the transfer, expiration or invalidation of the last remaining Licensed Patent, unless terminated earlier in accordance with its provisions.

5.2 Without prejudice to Section 5.3, a Party may terminate this Agreement at any time by means of written notice to the other Party in the event that the other Party breaches or otherwise fails to perform any of its obligations under this Agreement, provided that such breach or failure is not remedied within 30 (thirty) calendar days after receipt of a notice specifying the nature of such failure and requiring it to be remedied. Such right of termination shall not be exclusive of any other remedy or means of redress to which the non-defaulting Party may be lawfully entitled and all such remedies shall be cumulative.

5.3 Philips may terminate this Agreement forthwith by means of notice in writing to 3D Fusion in the event that:

a) a creditor or other claimant takes possession of, or a receiver, administrator or similar officer is appointed over any of the assets of 3D Fusion;

b) 3D Fusion makes any voluntary arrangement with its creditors or 3D Fusion becomes subject to any court or administration order pursuant to any bankruptcy or insolvency law; or

c) 3D Fusion or any of its Affiliates brings a claim of infringement of any of 3D Fusion's, or any of 3D Fusion's Affiliates', Patent(s), in connection with which 3D Fusion has obligations under Section 2.11 and/or Section 2.12 of this Agreement, against Philips or any of Philips' Affiliates, and 3D Fusion refuses to license such Patent(s) on commercially reasonable and non-discriminatory conditions, as provided in Section 2.11 and/or Section 2.12 of this Agreement.

3D Fusion may terminate this Agreement at the end of the Due Diligence Period by means of notice in writing to Philips.

5.4 Any termination or expiration shall not affect any royalty payment or other obligation under this Agreement accrued prior to such termination, except in the event of termination by 3D Fusion pursuant to Section 5.3, in which case 3D Fusion shall not be obliged to pay the amounts set forth in Section 4.1.

5.5 Upon the termination of this Agreement by either party for any reason pursuant to the provisions hereof, the licenses granted by Philips to 3D Fusion and its Affiliates under the Licensed Patents and Licensed Know-How shall automatically terminate and 3D Fusion shall immediately cease and procure that its Affiliates cease, the (a) use of the Licensed Patents, Licensed Know-How and Licensed Software, and (b) development, manufacture, licensing, sale or other disposal of Licensed Products and the provision of 3D Content services. Further, upon such termination, any and all amounts outstanding hereunder shall become immediately due and payable.

In the event of termination by 3D Fusion pursuant to Section 5.3, 3D Fusion shall forthwith return to Philips any and all Licensed Know-How received during the Due Diligence Period.

5.6 Upon the termination of this Agreement by either party for any reason pursuant to the provisions hereof, any license to the Improvements to the Licensed Patents, Licensed Know-How and Licensed Software that may have been granted to Philips and its Affiliates under Section 2.12, shall likewise immediately terminate on the effective

termination date of this Agreement. Accordingly, as of the effective date of termination of this Agreement, Phillips and its Affiliates shall immediately (a) cease the use of the any Improvements to the Licensed Patents, Licensed Know-How and Licensed Software, and (b) cease development, manufacture, licensing, sale or other disposal of any Philips products and/or services utilizing or otherwise incorporating the Improvements.

5.7 If any license(s) to 3DF IP Rights were granted to Philips and/or its Affiliates under Section 2.11 of this Agreement, upon the termination of this Agreement by either party for any reason pursuant to the provisions hereof, 3D Fusion shall have the right, exercisable within 60 (sixty) calendar days thereof, at its sole and exclusive discretion, to terminate any such license to the 3DF IP Rights. If 3D Fusion exercises this termination right, then Phillips and/or its Affiliates shall immediately: (a) cease the use of the 3DF IP Rights, and (b) cease development, manufacture, licensing, sale or other disposal of any Philips products and/or services utilizing or otherwise incorporating the 3DF IP Rights.

6. CONFIDENTIALITY

6.1 3D Fusion shall during the term of this Agreement and for a period of 5 (five) years thereafter, not disclose to any third party any information acquired from Philips or any of Philips' Affiliates in connection with this Agreement, or use such information for any other purpose than the (a) development, manufacture, licensing, and sale of Licensed Products in accordance with this Agreement, and (b) manufacture and use of 3D Content Creation Tools in accordance with this Agreement, or (c) provision of 3D Content Services in accordance with this Agreement. This obligation shall not apply to the extent information so acquired:

a) was known to 3D Fusion prior to the date on which such information was acquired from Philips or any of Philips' Affiliates, as shown by records of 3D Fusion or otherwise demonstrated to Philips' satisfaction within 14 calendar days following the disclosure of such information by Philips;
b) is or becomes part of the public domain through no fault of 3D Fusion; or
c) is lawfully obtained by 3D Fusion from a third party who was, at the moment of disclosure, not bound by similar confidentiality obligations.

6.2 3D Fusion shall protect all information acquired from acquired from Philips or any of Philips' Affiliates against any unauthorized disclosure in the same manner and with the same degree of care, but not less than a reasonable degree of care, with which it protects confidential information of its own.

6.3 3D Fusion acknowledges that the Source Code of the Licensed Software contains valuable, proprietary trade secrets of Philips, and 3D Fusion agrees to:

a. ensure that every person with access to the Source Code of the Licensed Software has signed a written confidentiality agreement, prior to any such access, which is legally sufficient and effective to bind such person to all of the confidentiality obligations of Section 6;

b. not allow any remote access to the Source Code of the Licensed Software, and not place or permit to be placed on any public website; and

c. promptly notify Philips of any unauthorized access to the Source Code of the Licensed Software, or any unauthorized use or disclosure of the Source Code of the Licensed Software.

6.4 The obligations concerning confidentiality contained in this Section 6 shall survive termination of this Agreement.

7. NO WARRANTY AND LIABILITY

7.1 The Licensed Patents, Licensed Know-How, Licensed Software and all information made available by Philips under this Agreement are provided on an "AS IS" basis. Philips makes no representation or warranty as to the validity of the Licensed Patents, or the suitability of the Licensed Patents, Licensed Know-How and/or Licensed Software for any particular purpose (including without limitation, providing the 3D Content Services) nor with regard to the ability of 3D Fusion to develop, manufacture and sell or otherwise dispose of Licensed Products using the Licensed Patents, Licensed Know-How and/or Licensed Software, nor with regard to the quality and/or performance of such Licensed Products or otherwise in relation to the Licensed Patents, Licensed Know-How and/or Licensed Software.

7.2 It is acknowledged by 3D Fusion that third parties may own intellectual property rights in the field of 3D Technology, in Licensed Products, or in 3D Content Services. Philips makes no warranty whatsoever that the development, manufacture, sale or other disposal of Licensed Products and the provision of 3D Content Services does not infringe or will not cause infringement of any intellectual property rights other than the Licensed Patents.

7.3 Philips and its Affiliates shall not be liable for any damages of whatever nature howsoever resulting from the use of the Licensed Patents, Licensed Know-How and/or Licensed Software or otherwise in connection with this Agreement.

7.4 Philips and its Affiliates shall be fully indemnified and held harmless by 3D Fusion from and against any and all third party claims in connection with Licensed Products developed, manufactured, licensed, sold or otherwise disposed of by or for 3D Fusion or the provision of 3D Content Services by 3D Fusion.

7.5 In the event that a court of competent jurisdiction renders judgment against Philips and/or any of its Affiliates notwithstanding the limitation of liability as set out in this Section 7, in no event shall the aggregate liability of Philips and/or its Affiliates to 3D Fusion in connection with this Agreement, except for the liability for breach of section 5.6 hereof, exceed the lower amount of either the aggregate amount of the fees paid by 3D Fusion to Philips under this Agreement over the 12 months immediately preceding the event that gave rise to a claim.

7.6 Any claim for damages by 3D Fusion against Philips or any of Philips' Affiliates under or in connection with this Agreement must be filed within 12 months from the

date that 3D Fusion learns of the event giving rise to any such claim and Philips and its Affiliates shall not be liable for any claim for damages brought or filed by 3D Fusion after said 12 month period. Further, and notwithstanding anything to the contrary provided in this Agreement, other than the breach by Philips or any of its Affiliates of Section 5.6, in no event shall Philips or any of its Affiliates be liable vis-à-vis 3D Fusion, 3D Fusion's Affiliates or its/their customers for any damages of whatever nature after the expiration or early termination of this Agreement. For the avoidance of any doubt, the liability of Philips or any of its Affiliates for breach of Section 5.6, shall continue after the expiration or early termination of this Agreement, subject to applicable statutes of limitations of the governing jurisdiction set forth in Section 16.1.

7.7 Philips and its Affiliates shall not be liable to 3D Fusion, its employees, directors, shareholders, agents or any third party for any indirect or consequential, incidental, punitive or special, damages (including, but not limited to, damages for loss of profit, for business interruption or for personal injury) arising out of or in any way related to or in connection with this Agreement, even if the other Party has been advised of the possibility of such damages.

7.8 The foregoing states the entire liability of Philips and its Affiliates for any actual or alleged infringement of third party or 3D Fusion's Intellectual Property Rights hereunder.

8. EXCLUSIONS

Nothing contained in this Agreement shall be construed:

(a) as granting, by implication, estoppel or otherwise, a license to any intellectual property, know-how or trade secrets other than stipulated in Section 2.1;
(b) as a warranty or representation by Philips and/or its Affiliates as to the validity or scope of any patent rights licensed hereunder;
(c) as imposing any obligation to file any patent application, to secure any patent or to maintain any patent in force;
(d) as conferring any license or right to copy or imitate the appearance and/or design of any product of Philips or any of Philips' Affiliates;
(e) as conferring any right upon 3D Fusion and/or its Affiliates to use in advertising, publicity or otherwise, any trademark or trade name, or any contraction, abbreviation or simulation thereof, of Philips and/or its Affiliates; or
(f) as imposing on either Party any obligation to instigate any suit or action for infringement of any of the Licensed Patents or to defend any suit or action brought by any third party which challenges or relates to the validity of any such patents. 3D Fusion shall have no right to instigate any such suit or action for infringement of any of the Licensed Patents, nor to defend any suit or action which challenges or relates to the validity of any such Licensed Patents.

9. EXPORT CONTROLS

9.1 3D Fusion shall use the 3D Technology in accordance with export control laws and regulations applicable to the goods, countries and persons or entities that 3D Fusion is trading in or with. 3D Fusion represents and undertakes that the 3D Technology will not be exported or re-exported to any person or country prohibited under European or U.S. export control laws and regulations. 3D Fusion shall indemnify Philips against any claim or damages resulting from 3D Fusion's conduct in contravention of the aforementioned export control laws and regulations.

10. NOTICES

10.1 Any notice, other than the Royalty Reporting Forms, required under this Agreement to be sent by either Party shall be given in writing by means of a letter, facsimile directed:

in respect of Philips to:
Philips Intellectual Property & Standards
P.O. Box 220
5600 AE Eindhoven
The Netherlands
F.a.o. Licensing Director 3D Technology
Fax no.: + 31 40 27 45267

In respect of 3D Fusion to:
110 Wall Street, Suite 7-2
New York, NY 10005
United States of America
F.a.o. CEO
e-mail: ilya.sorokin@3dfusionusa.com

or such other address as may have been specified in writing by either Party to the other.

11. NO ASSIGNMENT

11.1 This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors and assigns. Notwithstanding the foregoing sentence, this Agreement may not be delegated or assigned by 3D Fusion, in whole or in part, to any third party, without the written consent of an authorized representative of Philips, whose consent shall not be unreasonably withheld. Philips may delegate or assign this Agreement to any third party, agreeing to take on all of the rights and obligations of Philips under this Agreement, upon 7 (seven) days written notice to 3D Fusion.

12. INDEPENDENT CONTRACTORS

12.1 The Parties are and intend to remain independent contractors. Nothing in this Agreement shall be construed as an agency, joint venture or partnership between the Parties.

13. ENTIRE AGREEMENT

13.1 This Agreement sets forth the entire understanding and agreement between the Parties as to the subject matter of this Agreement and supersedes, cancels and merges all prior agreements, negotiations, commitments, communications and discussions between the Parties as to the subject matter hereof.

13.2 Neither Party shall be bound by any obligation, warranty, waiver, release or representation, except as expressly provided herein, or as may subsequently be agreed by a written instrument, signed by duly authorized representatives of each of the Parties.

14. NO WAIVER

14.1 Neither the failure nor the delay of either Party to enforce any provision of this Agreement shall constitute a waiver of such provision or of the right of either Party to enforce each and every provision of this Agreement.

15. DISPUTE RESOLUTION

15.1 Any dispute as may arise between the Parties shall be elevated to senior management of the Parties with the aim to resolve such dispute within 45 days of written notice by either Party requesting such resolution, provided that nothing shall prevent either Party from reverting to a competent court to obtain injunctive relief if in such Party's opinion, such injunctive relief is necessary to prevent irreparable, material harm.

16. APPLICABLE LAW AND JURISDICTION

16.1 This Agreement shall be governed by and construed in accordance with the laws of The Netherlands.

16.2 Any dispute between the Parties in connection with this Agreement (including any question regarding its existence, validity or termination) shall be submitted to the competent courts of The Hague, The Netherlands, provided always that, in case Philips is the plaintiff, Philips may at its sole discretion submit any such dispute

either to the competent courts in the venue of 3D Fusion's registered office. 3D Fusion hereby irrevocably waives any objection to the jurisdiction, process and venue of any such court and to the effectiveness, execution and enforcement of any order or judgment (including, but not limited to, a default judgment) of any such court in relation to this Agreement, to the maximum extent permitted by the law of any jurisdiction, the laws of which might be claimed to be applicable regarding the effectiveness, enforcement or execution of such order or judgment.

AS WITNESS, the Parties have caused this Agreement to be signed on the date first written above.

Koninklijke Philips Electronics N.V.	3DFusion Corporation
______________________	______________________
(signature)	(signature)
R.J. Peters Chief Executive Officer, Philips Intellectual Property & Standards	Name: I. Sorokin Title: Chief Executive Officer

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Schedule A
Licensed Patents

Country	Application No	Priority Date	Filing Date	Publication No	Grant No	Philips Ref	Title
CN	200680016593.3	11-05-2005	02-05-2006	101176354-A		000382	Cost-effective rendering of 2.5D video signals on 3D displays
EP	06728110.5	11-05-2005	02-05-2006	1882368-A		000382	Cost-effective rendering of 2.5D video signals on 3D displays
JP	08-510615	11-05-2005	02-05-2006			000382	Cost-effective rendering of 2.5D video signals on 3D displays
US	11/913877	11-05-2005	02-05-2006	2008-0252638-A1		000382	Cost-effective rendering of 2.5D video signals on 3D displays
CN	200680014612.5	29-04-2005	20-04-2006	101167371-A		000443	A 3D display with fractional views
EP	06727937.7	29-04-2005	20-04-2006			000443	A 3D display with fractional views
IN	4854/CHENP/2007	29-04-2005	20-04-2006			000443	A 3D display with fractional views
JP	08-508166	29-04-2005	20-04-2006			000443	A 3D display with fractional views
KR	10-2007-7024425	29-04-2005	20-04-2006			000443	A 3D display with fractional views
TW	095114930	29-04-2005	26-04-2006	200711452-A		000443	A 3D display with fractional views
US	11/912440	29-04-2005	20-04-2006	2008-0204550-A1		000443	A 3D display with fractional views
CN	200680025197.8	14-07-2005	12-07-2006			000496	2D/3D switchable display
EP	06780656.5	14-07-2005	12-07-2006	1905247-A		000496	2D/3D switchable display
JP	08-521019	14-07-2005	12-07-2006			000496	2D/3D switchable display
US	11/995574	14-07-2005	12-07-2006	2008-0204872-A1		000496	2D/3D switchable display
CN	200680021219.5	14-06-2005	13-06-2006			000497	Transflective Eink 3D LCD
EP	06756125.8	14-06-2005	13-06-2006	1894422-A		000497	Transflective Eink 3D LCD
JP	08-516464	14-06-2005	13-06-2006			000497	Transflective Eink 3D LCD
KR	10-2007-7029099	14-06-2005	13-06-2006			000497	Transflective Eink 3D LCD
TW	095120965	14-06-2005	09-06-2006	200709811-A		000497	Transflective Eink 3D LCD
US	11/917197	14-06-2005	13-06-2006	2008-0211734-A1		000497	Transflective Eink 3D LCD
CN	200680022344.1	23-06-2005	19-06-2006	101203881-A		001611	Method to store, transfer and identify 3D files.
EP	06765730.6	23-06-2005	19-06-2006			001611	Method to store, transfer and identify 3D files.
IN	5352/CHENP/2007	23-06-2005	19-06-2006			001611	Method to store, transfer and identify 3D files.
JP	08-517663	23-06-2005	19-06-2006			001611	Method to store, transfer and identify 3D files.
US	11/993233	23-06-2005	19-06-2006			001611	Method to store, transfer and identify 3D files.
CN	200680033881.0	16-09-2005	11-09-2006	101263722-A		001626	Pixel Shapes for optimised 2D/3D display
EP	06809277.4	16-09-2005	11-09-2006	1929792-A		001626	Pixel Shapes for optimised 2D/3D display
JP	08-530655	16-09-2005	11-09-2006			001626	Pixel Shapes for optimised 2D/3D display
US	12/065682	16-09-2005	11-09-2006	2008-0218459-A1		001626	Pixel Shapes for optimised 2D/3D display
CN	200680036946.7	04-10-2005	03-10-2006	101278166A		001556	Improvement of lenticular design by applying light blocking feature
EP	06809476.2	04-10-2005	03-10-2006	1935184A		001556	Improvement of lenticular design by applying light blocking feature
JP	08-534128	04-10-2005	03-10-2006			001556	Improvement of lenticular design by applying light blocking feature
US	12/089215	04-10-2005	03-10-2006	2008-0239157-A1		001556	Improvement of lenticular design by applying light blocking feature
CN	200680036664.2	04-10-2005	28-09-2006	101278557		001557	A 3D display with an improved pixel structure (pixelsplitting)
EP	06809431.7	04-10-2005	28-09-2006			001557	A 3D display with an improved pixel structure (pixelsplitting)
JP	08-534130	04-10-2005	28-09-2006			001557	A 3D display with an improved pixel structure (pixelsplitting)
US	12/089212	04-10-2005	28-09-2006	2008-0231951-A1		001557	A 3D display with an improved pixel structure (pixelsplitting)
CN	200680045376.7	02-12-2005	27-11-2006	101322418-A		002322	Depth dependent filtering of image and depth to avoid artefacts with multiview rendering
EP	06831955.7	02-12-2005	27-11-2006	1958459-A		002322	Depth dependent filtering of image and depth to avoid artefacts with multiview rendering
JP	08-542900	02-12-2005	27-11-2006			002322	Depth dependent filtering of image and depth to avoid artefacts with multiview rendering
US	12/085176	02-12-2005	27-11-2006	2009-0153652-A1		002322	Depth dependent filtering of image and depth to avoid artefacts with multiview rendering
CN	200680041071.X	04-11-2005	31-10-2006	101300855-A		002323	Viewdirection dependent filtering for multiview screens
EP	06821256.1	04-11-2005	31-10-2006	1946566A		002323	Viewdirection dependent filtering for multiview screens
JP	08-538436	04-11-2005	31-10-2006			002323	Viewdirection dependent filtering for multiview screens
US	12/091644	04-11-2005	31-10-2006	2008-0291268-A1		002323	Viewdirection dependent filtering for multiview screens
CN	200680047908.1	19-12-2005	05-12-2006	101341750-A		002324	Sparkling 3D rendering
EP	06832157.9	19-12-2005	08-12-2006	1967016-A		002324	Sparkling 3D rendering
JP	2008-545190	19-12-2005	08-12-2006			002324	Sparkling 3D rendering
US	12/097579	19-12-2005	05-12-2006	2009-0027384-A1		002324	Sparkling 3D rendering
CN	200680045321.7	02-12-2005	27-11-2006	101322155-A		002325	Depth from focus
EP	06831957.3	02-12-2005	27-11-2006	1958149-A		002325	Depth from focus
IN	2756/CHENP/2008	02-12-2005	27-11-2006			002325	Depth from focus
JP	08-542921	02-12-2005	27-11-2006			002325	Depth from focus
KR	10-2008-7016167	02-12-2005	27-11-2006			002325	Depth from focus
RU	2008126927	02-12-2005	27-11-2006			002325	Depth from focus
US	12/095183	02-12-2005	27-11-2006	2008-0303894-A1		002325	Depth from focus
CN	200680040799.0	02-11-2005	25-10-2006	101300519-A		002451	Multi-view 3D display without resolution loss and optical rendering
EP	06809696.1	02-11-2005	25-10-2006	1949170-A		002451	Multi-view 3D display without resolution loss and optical rendering
JP	08-538463	02-11-2005	25-10-2006			002451	Multi-view 3D display without resolution loss and optical rendering
US	12/092415	02-11-2005	25-10-2006	2008-0278808-A1		002451	Multi-view 3D display without resolution loss and optical rendering
CN	200680041112.3	02-11-2005	26-10-2006	101300520-A		002452	Multi-view 3D display without resolution or brightness loss
EP	06809715.3	02-11-2005	26-10-2006			002452	Multi-view 3D display without resolution or brightness loss
IN	2163/CHENP/2008	02-11-2005	26-10-2006			002452	Multi-view 3D display without resolution or brightness loss
JP	08-536467	02-11-2005	26-10-2006			002452	Multi-view 3D display without resolution or brightness loss
US	12/092416	02-11-2005	26-10-2006	2008-0278809-A1		002452	Multi-view 3D display without resolution or brightness loss
CN	200680030138.1	19-08-2005	17-08-2006	101243694		002508	Fractional view filtering for 3D displays
EP	06795677.1	19-08-2005	17-08-2006	1922882A		002508	Fractional view filtering for 3D displays
IN	815/CHENP/2008	19-08-2005	17-08-2006			002508	Fractional view filtering for 3D displays
JP	08-526601	19-08-2005	17-08-2006			002508	Fractional view filtering for 3D displays
RU	2008110492	19-08-2005	17-08-2006			002508	Fractional view filtering for 3D displays
US	12/063859	19-08-2005	17-08-2006	2008-0225114-A1		002508	Fractional view filtering for 3D displays
CN	200680032882.3	09-09-2005	08-09-2006	101258427-A		002525	Painted LC material containing switchable lenticulars
EP	06795967.6	09-09-2005	08-09-2006	1927021-A		002525	Painted LC material containing switchable lenticulars
IN	1176/CHENP/2008	09-09-2005	08-09-2006			002525	Painted LC material containing switchable lenticulars
JP	08-529762	09-09-2005	08-09-2006			002525	Painted LC material containing switchable lenticulars
US	12/065776	09-09-2005	08-09-2006			002525	Painted LC material containing switchable lenticulars

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Country	Application No	Priority Date	Filing Date	Publication No	Grant No	Philips Ref	Title
CN	200680041977.1	05-11-2005	30-10-2006	101305311		002620	Moire reduction for displays
DE	06821245.5	05-11-2005	30-10-2006		602006009294.6	002620	Moire reduction for displays
FR	06821245.5	05-11-2005	30-10-2006		1949171	002620	Moire reduction for displays
GB	06821245.5	05-11-2005	30-10-2006		1949171	002620	Moire reduction for displays
JP	08-539550	05-11-2005	30-10-2006			002620	Moire reduction for displays
US	12/092872	05-11-2005	30-10-2006	2008-0316604 A1		002620	Moire reduction for displays
CN	200680040309.7	27-10-2005	23-10-2006	101297414-A		002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
EP	06821204.2	27-10-2005	23-10-2006	1945692		002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
IN	2082/CHENP/2008	27-10-2005	23-10-2006			002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
JP	08-537271	27-10-2005	23-10-2006			002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
US	12/091592	27-10-2005	23-10-2006	2008-0265282 A1		002623	Directional OLED on structured substrate for multi/dual view displays or lighting applications
CN	200680036052.X	28-09-2005	31-08-2006	101273187-A		002830	A 2D/3D switchable display with arbitrary 2D and 3D areas
DE	06795540.3	28-09-2005	31-08-2006		602006007985.2	002830	A 2D/3D switchable display with arbitrary 2D and 3D areas
FR	06795540.3	28-09-2005	31-08-2006		1932365	002830	A 2D/3D switchable display with arbitrary 2D and 3D areas
GB	06795540.3	28-09-2005	31-08-2006		1932365	002830	A 2D/3D switchable display with arbitrary 2D and 3D areas
IN	1526/CHENP/2008	28-09-2005	31-08-2006			002830	A 2D/3D switchable display with arbitrary 2D and 3D areas
JP	08-532911	28-09-2005	31-08-2006			002830	A 2D/3D switchable display with arbitrary 2D and 3D areas
US	12/067764	28-09-2005	31-08-2006	2008-0252638 A1		002830	A 2D/3D switchable display with arbitrary 2D and 3D areas
CN	200680036991.4	03-10-2005	25-09-2006	101233600-A		003572	A configurable multi-view 2D/3D switchable display
EP	06809190.3	03-10-2005	25-09-2006	1935187-A		003572	A configurable multi-view 2D/3D switchable display
JP	08-534115	03-10-2005	25-09-2006			003572	A configurable multi-view 2D/3D switchable display
US	12/089399	03-10-2005	25-09-2006	2008-0225577 A1		003572	A configurable multi-view 2D/3D switchable display
CN	200680048558.5	20-12-2005	14-12-2006	101347001-A		003664	Automatic correction for misaligned LCOS 3D displays
EP	06842127.1	20-12-2005	14-12-2006	1967019		003664	Automatic correction for misaligned LCOS 3D displays
IN	3114/CHENP/2008	20-12-2005	14-12-2006			003664	Automatic correction for misaligned LCOS 3D displays
JP	08-546705	20-12-2005	14-12-2006			003664	Automatic correction for misaligned LCOS 3D displays
US	12/158407	20-12-2005	14-12-2006	2009-0002484 A1		003664	Automatic correction for misaligned LCOS 3D displays
CN	200680047232.0	15-12-2005	13-12-2006	101331776-A		003578	Barrier usage in lenticular system design
EP	06842444.8	15-12-2005	13-12-2006	1964415-A		003578	Barrier usage in lenticular system design
JP	08-545219	15-12-2005	13-12-2006			003578	Barrier usage in lenticular system design
US	12/096955	15-12-2005	13-12-2006	2008-0316379 A1		003578	Barrier usage in lenticular system design
CN	200680048661.7	23-12-2005	20-12-2006	101347002A		003734	Multiview 3D television using a set of microbeamers in rear projection
EP	06842627.9	23-12-2005	20-12-2006	1967020-A		003734	Multiview 3D television using a set of microbeamers in rear projection
JP	08-546808	23-12-2005	20-12-2006			003734	Multiview 3D television using a set of microbeamers in rear projection
US	12/158702	23-12-2005	20-12-2006	2008-0304014 A1		003734	Multiview 3D television using a set of microbeamers in rear projection
CN	200680043918.6	23-11-2005	17-11-2006	101313596-A		004239	Motion Based 3D
EP	06821481.2	23-11-2005	17-11-2006	1955553		004239	Motion Based 3D
JP	08-541864	23-11-2005	17-11-2006			004239	Motion Based 3D
US	12/094623	23-11-2005	17-11-2006	2008-0303736 A1		004239	Motion Based 3D
CN	200680047122.XA	14-12-2005	04-12-2006	101331420-A		004329	2D/3D display with two depth modes
EP	06832068.3	14-12-2005	04-12-2006	1963905-A		004329	2D/3D display with two depth modes
JP	08-545161	14-12-2005	04-12-2006			004329	2D/3D display with two depth modes
US	12/097199	14-12-2005	04-12-2006	2008-0316388 A1		004329	2D/3D display with two depth modes
CN	200680048172.5	20-12-2005	22-11-2006	101347433		004353	Improved 2D uniformity of switchable 2D/3D displays
EP	06821928.4	20-12-2005	22-11-2006	1966643		004353	Improved 2D uniformity of switchable 2D/3D displays
JP	2008-546698	20-12-2005	22-11-2006			004353	Improved 2D uniformity of switchable 2D/3D displays
US	12/097771	20-12-2005	22-11-2006	2008-0316472 A1		004353	Improved 2D uniformity of switchable 2D/3D displays
CN	200680048340.5	20-12-2005	28-11-2006	101341782-A		004354	Improved 2D uniformity of switchable 2D/3D displays
EP	06831935.A	20-12-2005	28-11-2006	1967024-A		004354	Improved 2D uniformity of switchable 2D/3D displays
JP	08-546703	20-12-2005	28-11-2006			004354	Improved 2D uniformity of switchable 2D/3D displays
US	12/097775	20-12-2005	28-11-2006	2008-0297594 A1		004354	Improved 2D uniformity of switchable 2D/3D displays
CN	200680047133.04	14-12-2005	05-12-2006	101331777-A		004358	Optimal driving for locally switchable 2D/3D displays with both electrodes structured
EP	06832091.6	14-12-2005	05-12-2006	1964414-A		004358	Optimal driving for locally switchable 2D/3D displays with both electrodes structured
JP	08-545167	14-12-2005	05-12-2006			004358	Optimal driving for locally switchable 2D/3D displays with both electrodes structured
US	12/097773	14-12-2005	05-12-2006	2008-0316143 A1		004358	Optimal driving for locally switchable 2D/3D displays with both electrodes structured
CN	200680048293.X	20-12-2005	11-12-2006	101444103-A		004361	Adaptive 3D display
EP	06832195.3	20-12-2005	11-12-2006	1963017-A		004361	Adaptive 3D display
JP	08-546714	20-12-2005	11-12-2006			004361	Adaptive 3D display
US	12/097781	20-12-2005	11-12-2006	2008-0295387 A1		004361	Adaptive 3D display
CN	200780009382.5	15-03-2006	14-03-2007	101405767-A		004390	High Quality Depth from Stereo by Multi-Candidate Surface Filtering
EP	07735103.9	15-03-2006	14-03-2007	1997072-A		004390	High Quality Depth from Stereo by Multi-Candidate Surface Filtering
JP	2009-500971	15-03-2006	14-03-2007			004390	High Quality Depth from Stereo by Multi-Candidate Surface Filtering
US	12/282904	15-03-2006	14-03-2007	2009-0080767 A1		004390	High Quality Depth from Stereo by Multi-Candidate Surface Filtering
CN	200680048472.1	20-12-2005	13-12-2006	101341761A		004581	Method to increase the resolution and number of views of multi-view 3D displays
EP	06842339.4	20-12-2005	13-12-2006	1967016-A		004581	Method to increase the resolution and number of views of multi-view 3D displays
JP	08-546749	20-12-2005	13-12-2006			004581	Method to increase the resolution and number of views of multi-view 3D displays
US	12/097775	20-12-2005	13-12-2006	2008-0316233 A1		004581	Method to increase the resolution and number of views of multi-view 3D displays
CN	200780006979.1	27-02-2006	16-02-2007	101390131A		005093	Texture adaptive depth scaling for stereoscopic television
EP	07705906.3	27-02-2006	16-02-2007	1991963-A		005093	Texture adaptive depth scaling for stereoscopic television
IN	4480/CHENP/2008	27-02-2006	16-02-2007			005093	Texture adaptive depth scaling for stereoscopic television
JP	08-556919	27-02-2006	16-02-2007			005093	Texture adaptive depth scaling for stereoscopic television
KR	10-2008-7023543	27-02-2006	16-02-2007			005093	Texture adaptive depth scaling for stereoscopic television
US	12/280377	27-02-2006	16-02-2007	2009-0115780 A1		005093	Texture adaptive depth scaling for stereoscopic television
CN	200780007026.8	28-02-2006	05-02-2007	101395634-A		005210	Directional hole filling algorithm
EP	07705793.3	28-02-2006	05-02-2007	1991958-A		005210	Directional hole filling algorithm
IN	4526/CHENP/2008	28-02-2006	05-02-2007			005210	Directional hole filling algorithm
JP	08-556875	28-02-2006	05-02-2007			005210	Directional hole filling algorithm
US	12/280573	28-02-2006	05-02-2007	2009-0016640 A1		005210	Directional hole filling algorithm
CN	200780006572.1	24-02-2006	20-02-2007	101390405		005229	Reversed mechanics 3D-module
EP	07705614.0	24-02-2006	20-02-2007	1989590-A		005229	Reversed mechanics 3D-module
JP	08-555920	24-02-2006	20-02-2007			005229	Reversed mechanics 3D-module
KR	10-2008-7020615	24-02-2006	20-02-2007			005229	Reversed mechanics 3D-module
TW	096106551	24-02-2006	26-02-2007	200739188-A		005229	Reversed mechanics 3D-module
US	12/279905	24-02-2006	20-02-2007	2009-0009669 A1		005229	Reversed mechanics 3D-module
CN	200780032503.3	04-09-2006	04-09-2007	101512601-A		005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
EP	07826246.2	04-09-2006	04-09-2007	2064675A		005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
IN	1229/CHENP/2009	04-09-2006	04-09-2007			005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
JP	2009-526255	04-09-2006	04-09-2007			005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
KR	10-2009-7006726	04-09-2006	04-09-2007			005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
US	12/439891	04-09-2006	04-09-2007	2009-0324059 A1		005273	High Quality Depth from Stereo by Multi-candidate Surface Filtering (2)
CN	200780007567.2	03-03-2006	26-02-2007	101395928A		005279	Switchable 3D display without 2D artefacts
EP	07705943.9	03-03-2006	26-02-2007	1994767-A		005279	Switchable 3D display without 2D artefacts
IN	4610/CHENP/2008	03-03-2006	26-02-2007			005279	Switchable 3D display without 2D artefacts
JP	08-556896	03-03-2006	26-02-2007			005279	Switchable 3D display without 2D artefacts
RU	2008139308	03-03-2006	26-02-2007			005279	Switchable 3D display without 2D artefacts
US	12/281001	03-03-2006	26-02-2007	2009-0033812 A1		005279	Switchable 3D display without 2D artefacts
CN	200780021419.6	09-06-2006	29-05-2007	101467106-A		005440	Using reflective or transmissive LCD to implement amplitude electro-hologram without using an analys
EP	07736123	09-06-2006	29-05-2007	2033052-A		005440	Using reflective or transmissive LCD to implement amplitude electro-hologram without using an analys
JP	09-513814	09-06-2006	29-05-2007			005440	Using reflective or transmissive LCD to implement amplitude electro-hologram without using an analys
US	12/303564	09-06-2006	29-05-2007			005440	Using reflective or transmissive LCD to implement amplitude electro-hologram without using an analys

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CN	200780021529.?	09-06-2006	25-05-2007	101467105A		005441	Suppression of zeroth order diffraction by appropriate rotation of polarization with transmissive or
EP	07736036.6	09-06-2006	25-05-2007	2033055-A		005441	Suppression of zeroth order diffraction by appropriate rotation of polarization with transmissive or
JP	09-513515	09-06-2006	25-05-2007			005441	Suppression of zeroth order diffraction by appropriate rotation of polarization with transmissive or
US	12/303971	09-06-2006	25-05-2007			005441	Suppression of zeroth order diffraction by appropriate rotation of polarization with transmissive or
CN	200780011472.7	31-03-2006	22-03-2007	101416520		005471	Generic stereoscopic format
EP	07735242.5	31-03-2006	23-03-2007	2005757-A		005471	Generic stereoscopic format
IN	5240?/CHENP/2008	31-03-2006	23-03-2007			005471	Generic stereoscopic format
JP	09-502393	31-03-2006	23-03-2007			005471	Generic stereoscopic format
KR	10-2008-[illegible]	31-03-2006	23-03-2007			005471	Generic stereoscopic format
RU	2008143203	31-03-2006	23-03-2007			005471	Generic stereoscopic format
US	12/294515	31-03-2006	23-03-2007			005471	Generic stereoscopic format
CN	200780017005.?	09-05-2006	07-05-2007	101443810-A		005826	Image adaptive block erosion
EP	07735797.9	09-05-2006	07-05-2007	2019...		005826	Image adaptive block erosion
IN	6085/CHENP/2008	09-05-2006	07-05-2007			005826	Image adaptive block erosion
JP	09-509[illegible]	09-05-2006	07-05-2007			005826	Image adaptive block erosion
KR	10-2008-7027140	09-05-2006	07-05-2007			005826	Image adaptive block erosion
US	12/299832	09-05-2006	07-05-2007	2009-0179920-A1		005826	Image adaptive block erosion
CN	200780044922.0	04-12-2006	03-12-2007	101589626A		006177	Modifying depth map encoding for a perceptual higher quality
EP	07849316.5	04-12-2006	03-12-2007	2106665-A		006177	Modifying depth map encoding for a perceptual higher quality
IN	3366/CHENP/2009	04-12-2006	03-12-2007			006177	Modifying depth map encoding for a perceptual higher quality
JP	2009-539847	04-12-2006	03-12-2007			006177	Modifying depth map encoding for a perceptual higher quality
US	12/517214	04-12-2006	03-12-2007			006177	Modifying depth map encoding for a perceptual higher quality
CN	200780036785.8	19-09-2006	17-09-2007	101505716-A		006205	Lifetime improvement for vacuum mounted lenticulars using buffers
EP	07826450.1	19-09-2006	17-09-2007	2067500-A		006205	Lifetime improvement for vacuum mounted lenticulars using buffers
JP	09-529303	19-09-2006	17-09-2007			006205	Lifetime improvement for vacuum mounted lenticulars using buffers
US	60/822763	18-08-2006	18-08-2006			006205	Lifetime improvement for vacuum mounted lenticulars using buffers
CN	200780030617.?	17-08-2006	14-08-2007	101507269-A		006290	Viewing angle doubling for 3D multi-view displays
EP	07805399.8	17-08-2006	14-08-2007	2055110-A		006290	Viewing angle doubling for 3D multi-view displays
JP	2009-524294	17-08-2006	14-08-2007			006290	Viewing angle doubling for 3D multi-view displays
US	12/377880	17-08-2006	14-08-2007			006290	Viewing angle doubling for 3D multi-view displays
CN	200780031904.1	24-08-2006	11-04-2007	101506729-A		006308	Curvature reduction switchable polymer lenticulars
DE	07735459.4	24-08-2006	11-04-2007		2064580	006308	Curvature reduction switchable polymer lenticular
FR	07735459.4	24-08-2006	11-04-2007		2064580	006308	Curvature reduction switchable polymer lenticulars
GB	07735459.4	24-08-2006	11-04-2007		2064580	006308	Curvature reduction switchable polymer lenticulars
JP	2009-525110	24-08-2006	11-04-2007			006308	Curvature reduction switchable polymer lenticulars
KR	10-2009-7003425	24-08-2006	11-04-2007			006308	Curvature reduction switchable polymer lenticular
TW	096130093	24-08-2006	21-08-2007	200817734-A		006308	Curvature reduction switchable polymer lenticulars
US	12/370375	24-08-2006	11-04-2007			006308	Curvature reduction switchable polymer lenticulars
CN	200780032421.0	31-08-2006	23-08-2007	101512416-A		006471	Backlight for a lenticular 3D display with improved brightness and contrast
EP	07826128.8	31-08-2006	23-08-2007	2062088-A		006471	Backlight for a lenticular 3D display with improved brightness and contrast
JP	2009-526229	31-08-2006	23-08-2007			006471	Backlight for a lenticular 3D display with improved brightness and contrast
US	12/438737	31-08-2006	23-08-2007	2009-0322862-A1		006471	Backlight for a lenticular 3D display with improved brightness and contrast
CN	200780047005.7	19-12-2006	14-12-2007	101563935-A		006835	Depth estimation from video assisted by audio
EP	07849501.7	19-12-2006	14-12-2007	2092760A		006835	Depth estimation from video assisted by audio
IN	4204/CHENP/2009	19-12-2006	14-12-2007			006835	Depth estimation from video assisted by audio
JP		19-12-2006	14-12-2007			006835	Depth estimation from video assisted by audio
KR	10-2009-7015008	19-12-2006	14-12-2007			006835	Depth estimation from video assisted by audio
RU	2009127757	19-12-2006	14-12-2007			006835	Depth estimation from video assisted by audio
US	12/519378	19-12-2006	14-12-2007			006835	Depth estimation from video assisted by audio
CN	200780037324.6	04-10-2006	02-10-2007	101523434-A		006557	A novel method for depth map post processing for high quality 3D impression
EP	07826616.0	04-10-2006	02-10-2007	2074586-A		006557	A novel method for depth map post processing for high quality 3D impression
IN	2356/CHENP/2009	04-10-2006	02-10-2007			006557	A novel method for depth map post processing for high quality 3D impression
JP	2009-530990	04-10-2006	02-10-2007			006557	A novel method for depth map post processing for high quality 3D impression
KR	10-2009-7008979	04-10-2006	02-10-2007			006557	A novel method for depth map post processing for high quality 3D impression
US	12/443718	04-10-2006	02-10-2007	2010-0002948-A1		006557	A novel method for depth map post processing for high quality 3D impression
CN	200780043362.4	21-11-2006	15-11-2007	101542529-A		007851	Depth from One Image Using Visual Saliency
EP	07849156.0	21-11-2006	15-11-2007	2087466A		007851	Depth from One Image Using Visual Saliency
IN	3325/CHENP/2009	21-11-2006	15-11-2007			007851	Depth from One Image Using Visual Saliency
JP	2009-537725	21-11-2006	15-11-2007			007851	Depth from One Image Using Visual Saliency
US	12/514464	21-11-2006	15-11-2007			007851	Depth from One Image Using Visual Saliency
CN	200780047096.5	19-12-2006	12-12-2007	101563629-A		007231	3D display with diminished blurring
EP	07849438.2	19-12-2006	12-12-2007	2095158-A		007231	3D display with diminished blurring
JP	2009-542292	19-12-2006	12-12-2007			007231	3D display with diminished blurring
US	12/519389	19-12-2006	12-12-2007	2010-0027113-A1		007231	3D display with diminished blurring
CN	200780047217.6	19-12-2006	12-12-2007	101558873-A		007233	Low-cost large-screen 3D (home) cinema
EP	07849431.5	19-12-2006	12-12-2007	2095173-A		007233	Low-cost large-screen 3D (home) cinema
JP	2009-542307	19-12-2006	12-12-2007			007233	Low-cost large-screen 3D (home) cinema
US	12/519916	19-12-2006	12-12-2007			007233	Low-cost large-screen 3D (home) cinema
CN	200880021844.7	26-06-2007	18-06-2008			007944	Efficient coding of occlusion data
EP	08763315.9	26-06-2007	18-06-2008	2163034		007944	Efficient coding of occlusion data
IN	366/CHENP/2010	26-06-2007	18-06-2008			007944	Efficient coding of occlusion data
JP	not yet known	26-06-2007	18-06-2008			007944	Efficient coding of occlusion data
KR	10-2010-7001680	26-06-2007	18-06-2008			007944	Efficient coding of occlusion data
RU		26-06-2007	18-06-2008			007944	Efficient coding of occlusion data
US	12/665093	26-06-2007	18-06-2008			007944	Efficient coding of occlusion data
CN	200880023196.1	03-07-2007	24-06-2008			008008	Motion Assisted Gravity
EP	08776388.3	03-07-2007	24-06-2008			008008	Motion Assisted Gravity
IN	538/CHENP/2010	03-07-2007	24-06-2008			008008	Motion Assisted Gravity
JP	not yet known	03-07-2007	24-06-2008			008008	Motion Assisted Gravity
US	12/667241	03-07-2007	24-06-2008			008008	Motion Assisted Gravity
AU		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
BR		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
CA		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
CN		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
EG		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
EP	08807611.7	24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
ID		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
IN		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
JP		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
KR		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
MX		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
MY		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
RU		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
US		24-09-2007				008331	2D compatibility using compressed stereo video formats
US	12/524665	24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
ZA		24-09-2007	16-09-2008			008331	2D compatibility using compressed stereo video formats
CN	200880012592.1	17-04-2007	14-04-2008			008450	Improved GRIN-lens design for 2D/3D switchable displays
EP	08737826.1	17-04-2007	14-04-2008	2140304 A		008450	Improved GRIN-lens design for 2D/3D switchable displays
IN	6603/CHENP/2009	17-04-2007	14-04-2008			008450	Improved GRIN-lens design for 2D/3D switchable displays
JP	2010-503637	17-04-2007	14-04-2008			008450	Improved GRIN-lens design for 2D/3D switchable displays
KR	10-2009-7023830	17-04-2007	14-04-2008			008450	Improved GRIN-lens design for 2D/3D switchable displays
TW	097113677	17-04-2007	15-04-2008	200900827 A		008450	Improved GRIN-lens design for 2D/3D switchable displays
US	12/595250	17-04-2007	14-04-2008			008450	Improved GRIN-lens design for 2D/3D switchable displays
CN	200880015625.8	11-05-2007	05-05-2008			008487	Automatic disparity to depth conversion
EP	08735076.2	11-05-2007	05-05-2008	2153669		008487	Automatic disparity to depth conversion
IN	7128/CHENP/2009	11-05-2007	05-05-2008			008487	Automatic disparity to depth conversion
JP	not yet known	11-05-2007	05-05-2008			008487	Automatic disparity to depth conversion
KR	10-2009-7025782	11-05-2007	05-05-2008			008487	Automatic disparity to depth conversion
US	12/599362	11-05-2007	05-05-2008			008487	Automatic disparity to depth conversion

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WO	IB2008/054420	02-11-2007	27-10-2008	2009/057030 A1		008696	[illegible]
TW	097137515	02-10-2007	30-09-2008	200923422A		008697	Optimal pixel distribution for 3D displays with view doubling
WO	IB2008/053971	02-10-2007	30-09-2008	2009/044334 A1		008697	Optimal pixel distribution for 3D displays with view doubling
TW	098103729	08-02-2008	05-02-2009	200938878-A		008794	Application- and/or content-dependent adaptation of the lens strength in lenticular based 3D display
WO	IB2009/050395	08-02-2008	02-02-2009			008794	Application- and/or content-dependent adaptation of the lens strength in lenticular based 3D display
CN	unknown	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
EP	02785359 0	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
IN	923/CHENP/2010	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
JP	not yet known	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
KR		26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
US	12/669828	26-07-2007	18-07-2008			008920	Depth propagation with correction for 3D video production
WO	IB2008/054027	11-10-2007	02-10-2008	2009/047681 A1		009182	Post processing of centre view depth map using occlusion depth map
TW	098104096	11-02-2008	09-02-2009	200952463-A		009443	A 3D landscape/portrait display
WO	IB2009/050491	11-02-2008	06-02-2009			009443	A 3D landscape/portrait display
TW	097149181	20-12-2007	17-12-2008	200935872 A		009631	Depth editor with interactive segment merging
WO	IB2008/055286	20-12-2007	15-12-2008			009631	Depth editor with interactive segment merging
WO	IB2009/052765	27-06-2008	26-06-2009			009849	Improved 3D display design using lenticulars combined with a diffusor layer or a micro lens array
TW	098102271	24-01-2008	21-01-2009	200945043A		009878	Colour blending for calculating the hidden texture layer in a layered 3D video format
WO	IB2009/050222	24-01-2008	21-01-2009			009878	Colour blending for calculating the hidden texture layer in a layered 3D video format
TW	098118675	02-06-2008	01-06-2009	201004313-A		009896	Depth map coding of side or occluded areas (Drape)
WO	IB2009/052225	02-06-2008	27-05-2009			009896	Depth map coding of side or occluded areas (Drape)
TW	098118246	02-06-2008	02-06-2009	201003123A		010417	A 3D Display with a low-dn lens array (revisited)
WO	IB2009/052233	02-06-2008	27-05-2009			010417	A 3D Display with a low-dn lens array (revisited)
TW	098128413	26-08-2008	24-08-2009			010591	A flexible format for multi-type multilayer 3D content storage and display
WO	IB2009/053609	26-08-2008	17-08-2009			010591	A flexible format for multi-type multilayer 3D content storage and display.
WO	IB2009/053167	26-07-2008	22-07-2009			010592	Use of inpainting techniques for image and dept correction
TW	098143542	22-12-2008	21-12-2009			010802	Multi-view 3D display with reduced banding
WO	IB2009/055789	22-12-2008	16-12-2009			010802	Multi-view 3D display with reduced banding
WO	IB2009/053358	11-09-2008	04-09-2009			010931	Adaptive Weighed Mixing Adjustment for Bilateral Filter
TW	098134162	10-10-2008	08-10-2009			011060	Parallax Transform interpolation
WO	IB2009/054302	10-10-2008	01-10-2009			011060	Parallax Transform interpolation
TW	098132351	25-09-2008	24-09-2009			011080	Depth signal improvement in the presence of alpha
WO	IB2009/054160	25-09-2008	23-09-2009			011080	Depth signal improvement in the presence of alpha
TW	098137158	04-11-2008	02-11-2009			011087	Metadata for Occlusion Layers
WO	IB2009/054869	04-11-2008	03-11-2009			011087	Metadata for Occlusion Layers
TW	098131956	25-09-2008	22-09-2009			011089	Specifying dependence between layers in multi-layer 3D representations
WO	IB2009/054088	25-09-2008	18-09-2009			011089	Specifying dependence between layers in multi-layer 3D representations
TW	098136208	28-10-2008	26-10-2009			011690	Soft 2D-3D switching of 3D displays based on user attention
WO	IB2009/054713	28-10-2008	26-10-2009			011690	Soft 2D-3D switching of 3D displays based on user attention
TW	098136206	28-10-2008	26-10-2009			011691	System and apparatus for automated generation of WOWvx Declipse content in 3D content creation tools
WO	IB2009/054638	28-10-2008	21-10-2009			011691	System and apparatus for automated generation of WOWvx Declipse content in 3D content creation tools
WO	IB2009/055727	15-12-2008	14-12-2009			011820	Automatic depth estimation for soccer video
TW	098135202	21-10-2008	19-10-2009			012017	Protection of 3D content in the Declipse 2 format against compression and resizing
WO	IB2009/054543	21-10-2008	15-10-2009			012017	Protection of 3D content in the Declipse 2 format against compression and resizing
EP	08170482 7	02-12-2008	02-12-2008			012030	Question interface for 3D picture creation
TW	098140846	02-12-2008	30-11-2009			012030	Question interface for 3D picture creation
WO	IB2009/055363	02-12-2008	26-11-2009			012030	Question interface for 3D picture creation
EP	08171031 1	09-12-2008	09-12-2008			012036	A hybrid interface for interactive image segmentation
TW	098142117	09-12-2008	09-12-2009			012036	A hybrid interface for interactive image segmentation
WO	IB2009/055486	09-12-2008	03-12-2009			012036	A hybrid interface for interactive image segmentation
TW	[illegible]	18-12-2008	15-12-2009			012085	Ideal panel and lenticular configurations for autostereoscopic 3D displays
WO	IB2009/055705	18-12-2008	11-12-2009			012085	Ideal panel and lenticular configurations for autostereoscopic 3D displays
EP	[illegible]	04-11-2008	04-11-2008			012091	Liveliness control for 2D to 3D conversion
TW	098137434	04-11-2008	04-11-2009			012091	Liveliness control for 2D to 3D conversion
WO	IB2009/054857	04-11-2008	02-11-2009			012091	Liveliness control for 2D to 3D conversion
EP	08171627.6	15-12-2008	15-12-2008			012131	Image-based 3D video format.
WO	IB2009/055628	15-12-2008	10-12-2009			012131	Image-based 3D video format.
EP	09155332.1	17-03-2009	17-03-2009			012392	A Colour Sequential display
TW		17-03-2009				012392	A Colour Sequential display
WO		17-03-2009				012392	A Colour Sequential display
EP	09161377.8	28-05-2009	28-05-2009			012922	A Blue Phase Switchable 3D Lenticular
TW		28-05-2009				012922	A Blue Phase Switchable 3D Lenticular
WO		28-05-2009				012922	A Blue Phase Switchable 3D Lenticular
EP	09156092.0	25-03-2009	25-03-2009			012924	R2R switchable cell making
EP	09156465.8	25-03-2009	27-03-2009			012924	R2R switchable cell making
WO		25-03-2009				012924	R2R switchable cell making
EP	09161330.7	28-05-2009	28-05-2009			013213	Single-cone auto-stereoscopic 3D display
EP	09163875.9	28-05-2009	26-06-2009			013213	Single-cone auto-stereoscopic 3D display
EP		28-05-2009	26-06-2009			013213	Single-cone auto-stereoscopic 3D display
TW		28-05-2009				013213	Single-cone auto-stereoscopic 3D display
WO		28-05-2009				013213	Single-cone auto-stereoscopic 3D display
EP	09174882.2	03-11-2009	03-11-2009			013358	Time sequential subsubpixel driving of LCD's for improved resolution 3D.
TW		03-11-2009				013358	Time sequential subsubpixel driving of LCD's for improved resolution 3D.
WO		03-11-2009				013358	Time sequential subsubpixel driving of LCD's for improved resolution 3D
EP	09161339.6	28-05-2009	28-05-2009			013359	Ultra high angle (3D) LCD
TW		28-05-2009				013359	Ultra high angle (3D) LCD
WO		28-05-2009				013359	Ultra high angle (3D) LCD
EP	09163872.6	26-06-2009	26-06-2009			013360	Improved 3D performance by time-sequential operation
TW		26-06-2009				013360	Improved 3D performance by time-sequential operation
WO		26-06-2009				013360	Improved 3D performance by time-sequential operation
EP	09163866 8	26-06-2009	26-06-2009			013361	Improved 2D mode of 2D/3D switchable TV
WO		26-06-2009				013361	Improved 2D mode of 2D/3D switchable TV
EP	09174880 5	03-11-2009	03-11-2009			013883	Capping layer on electrodes of (multi-electrode) gradient-index lens
TW		03-11-2009				013883	Capping layer on electrodes of (multi-electrode) gradient-index lens
WO		03-11-2009				013883	Capping layer on electrodes of (multi-electrode) gradient-index lens
EP	[illegible]	13-11-2009	13-11-2009			014160	Efficient alpha map coding in 3D/stereoscopic video enabling improved fore/background transitions
TW		13-11-2009				014160	Efficient alpha map coding in 3D/stereoscopic video enabling improved fore/background transitions
WO		13-11-2009				014160	Efficient alpha map coding in 3D/stereoscopic video enabling improved fore/background transitions
EP	[illegible]	02-10-2009	02-10-2009			014161	Encoding preferred rendering direction in video signal
WO		02-10-2009				014161	Encoding preferred rendering direction in video signal

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EP	09173901.9	13-11-2009	13-11-2009			C14307	Rendering of 2D-plus-Depth content with asymmetric resolution of centre view and parallax map
WO		13-11-2009				C14307	Rendering of 2D-plus-Depth content with asymmetric resolution of centre view and parallax map
CN	99801455.9	30-06-1998	14-06-1999	1277699 A	99801455.9	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo interception filter)
DE	99922452.7	30-06-1998	14-06-1999	1038271-A1	69912576.6	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo interception filter)
FR	99922458.7	30-06-1998	14-06-1999	1038271-A1	1038271	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo interception filter)
GB	99922458.7	30-06-1998	14-06-1999	1038271-A1	1038271	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo interception filter)
JP	00-557434	30-06-1998	14-06-1999	02-519792	4564436	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo interception filter)
KR	10-2000-7001924	30-06-1998	14-06-1999	10-2001-0023[illegible]	10-0637012	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo interception filter)
TW	088101951	30-06-1998	03-02-2000		169772	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo interception filter)
US	09/107515	30-06-1998	30-06-1998		6496183	A 023407	STEREOSCOPIC 3D IN HARDWARE ACCELERATED RENDERING ARCHITECT (stereo interception filter)
DE	94201577.5	15-07-1993	08-07-1994	0634733-A3	69421967.3	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
FR	94201977.5	15-07-1993	08-07-1994	0634733-A3	0634733	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
GB	94201977.5	15-07-1993	08-07-1994	0634733-A3	0634733	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
JP	94-161066	15-07-1993	13-07-1994	95-75264	3645922	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
KR	10-1994-0017045	15-07-1993	15-07-1994	95-0004045	0329874	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
US	08/795295	15-07-1993	04-02-1997		5784064	B 033861	ENHANCING MPEG IMAGES WITH DEPTH INFORMATION
DE	96914379.1	05-07-1995	12-06-1996	0783825-A1	69616008.4	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
FR	96914376.3	05-07-1995	12-06-1996	0783825-A1	0783825	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
GB	96914376.3	05-07-1995	12-06-1996	0783825-A1	0783825	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
JP	97-504938	05-07-1995	12-06-1996	98-505689	4010564	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
KR	97-701421	05-07-1995	12-06-1996	97-0705907	0418146	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
US	08/670377	05-07-1995	25-06-1996		6118584	B 033992	PIXEL LAY-OUT FOR 3D MATRIX DISPLAY
DE	97921983.9	07-06-1996	29-05-1997	0843940-A1	69714551.4	B 034052	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
FR	97921983.9	07-06-1996	29-05-1997	0843940-A1	0843940	B 034052	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
GB	97921983.9	07-06-1996	29-05-1997	0843940-A1	0843940	B 034052	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
JP	98-500365	07-06-1996	29-05-1997	99-511316	4047357	B 034052	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
US	08/669912	07-06-1996	05-06-1997		6023263	B 034052	3D GRAPHICS ARCHITECTURE FOR MULTIPLE VIEWS
DE	97924185.8	21-06-1996	12-06-1997	0846308-A1	69715136.0	B 034084	IMAGE DEPTH DATA COMPRESSION
FR	97924185.8	21-06-1996	12-06-1997	0846308-A1	0846308	B 034084	IMAGE DEPTH DATA COMPRESSION
GB	97924185.8	21-06-1996	12-06-1997	0846308-A1	0846308	B 034084	IMAGE DEPTH DATA COMPRESSION
JP	98-502596	21-06-1996	12-06-1997	99-511884	3952835	B 034084	IMAGE DEPTH DATA COMPRESSION
KR	98-701275	21-06-1996	12-06-1997	10-1999-0044043	0435609	B 034084	IMAGE DEPTH DATA COMPRESSION
US	08/880032	21-06-1996	20-06-1997		6104837	B 034084	IMAGE DEPTH DATA COMPRESSION
DE	97200399.0	23-02-1996	13-02-1997	0791847-A1	69715534.6	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
FR	97200399.0	23-02-1996	13-02-1997	0791847-A1	0791847	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
GB	97200399.0	23-02-1996	13-02-1997	0791847-A1	0791847	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
JP	97-38896	23-02-1996	24-02-1997	97-236777	[illegible]	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
JP	07-034284	23-02-1996	24-02-1997	07-185097	[illegible]	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
JP	08-268132	23-02-1996	24-02-1997			B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
KR	97-6580	23-02-1996	24-02-1997		0429091	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
US	08/798678	23-02-1996	13-02-1997		[illegible]	B 034113	COLOUR FILTER LAY-OUT FOR 3D-LCD
DE	97942159.1	14-11-1996	13-10-1997	0877966-A1	69720647.9	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
FR	97942159.1	14-11-1996	13-10-1997	0877966 A1	0877966	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
GB	97942159.1	14-11-1996	13-10-1997	0877966 A1	0877966	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
NL	97942159.1	14-11-1996	13-10-1997	0877966-A1	0877966	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
US	08/964103	14-11-1996	06-11-1997		[illegible]	B 034119	SWITCHABLE LENTICULAR FOR AUTO-STEREOSCOPIC DISPLAY
EP	98926497.1	25-07-1997	05-07-1998	0934546-A1		B 034172	3D-LCD LENTICULAR ADAPTOR
JP	99-509574	25-07-1997	08-07-1998	01-501073	4213226	B 034172	3D-LCD LENTICULAR ADAPTOR
KR	10-1999-7002259	25-07-1997	09-07-1998	10-2000-[illegible]	[illegible]	B 034172	3D-LCD LENTICULAR ADAPTOR
US	09/119891	23-07-1997	21-07-1998		6801243	B 034172	3D-LCD LENTICULAR ADAPTOR
CN	03818215.7	31-07-2002	09-07-2003	1672432		FR020079	DISPARITY CODING SYNTAX
EP	03740961.2	31-07-2002	09-07-2003	1527613-A		FR020079	DISPARITY CODING SYNTAX
JP	04-525645	31-07-2002	09-07-2003	05-535203		FR020079	DISPARITY CODING SYNTAX
KR	10-2005-7001747	31-07-2002	09-07-2003			FR020079	DISPARITY CODING SYNTAX
US	10/522464	31-07-2002	09-07-2003	2006-0023950-A1		FR020079	DISPARITY CODING SYNTAX
CN	200380101874.9	23-10-2002	01-10-2003	1799266	200380101874.6	FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
EP	03809385.1	23-10-2002	01-10-2003	1574079 A		FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
JP	04-546297	23-10-2002	01-10-2003	06-513596		FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
KR	10-2005-7006874	23-10-2002	01-10-2003			FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
US	10/531931	23-10-2002	01-10-2003	2006-0082575-A1	7224355	FR020109	ENHANCEMENT SCHEME MPEG DEPTH-MAPS
US	09/816032	01-05-2000	20-04-2001	2001-0045951-A1	6538540	GB000051	OPTIMISATION OF THE 3D GRAPHICS PIPELINE AS APPLIED TO RENDI
CN	200480022178.0	31-07-2003	22-07-2004	1830218-A		GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
EP	04744277.2	31-07-2003	22-07-2004	1652388-A		GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
JP	2006-521727	31-07-2003	22-07-2004			GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
KR	10-2006-7001848	31-07-2003	22-07-2004			GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
US	10/566548	31-07-2003	22-07-2004	2006-0197179-A1	7619604	GB030127	2D/3D LCD WITH PATTERNED OLED BACKLIGHT
CN	200480027121.X	20-09-2003	09-09-2004	1853420A		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
EP	04769970.7	20-09-2003	09-09-2004	1668920-A1		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
JP	06-526771	20-09-2003	09-09-2004	07-506131		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
KR	10-2006-7005335	20-09-2003	09-09-2004			GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
TW	093128266	20-09-2003	17-09-2004	200526795		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
US	10/571623	20-09-2003	09-09-2004	2006-0279680-A1		GB030159	PATTERNED RETARDERS FOR 3D LCDS WITH IMPROVED PERFORMANCE
CN	200480027946.1	27-09-2003	23-09-2004	1856720-A	200480027946.1	GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
EP	04770067.9	27-09-2003	23-09-2004	1709467-A		GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
JP	2006-527552	27-09-2003	23-09-2004			GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
KR	10-2006-7005656	27-09-2003	23-09-2004			GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
TW	093129085	27-09-2003	24-09-2004	200523504		GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
US	10/573084	27-09-2003	23-09-2004	2007-0109811-A1		GB030164	2D/3D SWITCHABLE LCD WITH GROOVED BACKLIGHT PANEL
CN	200480028926.6	04-10-2003	30-09-2004	1864414-A		GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
EP	04770133.9	04-10-2003	30-09-2004	1673947-A		GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
JP	06-530952	04-10-2003	30-09-2004			GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
KR	2006-7006448	04-10-2003	30-09-2004			GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
TW	093125897	04-10-2003	01-10-2004	200519811		GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
US	10/574141	04-10-2003	30-09-2004	2007-0052699-A1		GB030174	DRIVING METHOD TO IMPROVE COLOURS FOR 3D LCD
CN	200480028923.2	04-10-2003	30-09-2004	1864413-A		GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
EP	04770135.4	04-10-2003	30-09-2004	1673949-A		GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
JP	06-530954	04-10-2003	30-09-2004			GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
KR	2006-7006451	04-10-2003	30-09-2004			GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
TW	093129894	04-10-2003	01-10-2004	200523493		GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
US	10/574142	04-10-2003	30-09-2004	2006-0279547-A1		GB030175	METHOD TO IMPROVE VIEWING ANGLE DEPENDENCY 3D LCD
CN	200480028891.6	04-10-2003	30-09-2004	1864089 A		GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
DE	04770136.2	04-10-2003	30-09-2004		602004012129.0	GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
FR	04770136.2	04-10-2003	30-09-2004		1673652	GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
GB	04770136.2	04-10-2003	30-09-2004		1673652	GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
JP	06-530955	04-10-2003	30-09-2004			GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
KR	2006-7006463	04-10-2003	30-09-2004			GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
US	10/574140	04-10-2003	30-09-2004	2007-[illegible]-A1		GB030176	DRIVING SCHEME TO IMPROVE IMAGE QUALITY BARRIER 3D LCD
CN	200480032496.5	07-11-2003	01-11-2004	[illegible]-A	200480032496.5	GB030200	SWITCHABLE BACKLIGHT FOR 2D/3D DISPLAY
EP	04799054.4	07-11-2003	01-11-2004	[illegible]-A		GB030200	SWITCHABLE BACKLIGHT FOR 2D/3D DISPLAY
JP	06-537544	07-11-2003	01-11-2004			GB030200	SWITCHABLE BACKLIGHT FOR 2D/3D DISPLAY
US	10/578071	07-11-2003	01-11-2004	2007-[illegible]-A1	7626643	GB030200	SWITCHABLE BACKLIGHT FOR 2D/3D DISPLAY
CN	200480035751.1	03-12-2003	02-12-2004	[illegible]-A		GB030215	2D/3D DISPLAYS
EP	04801447.6	03-12-2003	02-12-2004	1692875-A		GB030215	2D/3D DISPLAYS
JP	06-542104	03-12-2003	02-12-2004			GB030215	2D/3D DISPLAYS
KR	10-2006-7010581	03-12-2003	02-12-2004			GB030215	2D/3D DISPLAYS
US	10/581215	03-12-2003	02-12-2004	2008-0278640-A1		GB030215	2D/3D DISPLAYS

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CN	200580002169.>	09-01-2004	06-01-2005	1910938-A		[illegible]	OPTICAL PATH LENGTH ADJUSTER BASED ON BIREFRINGENT MATERIALS
EP	05702595 1	09 01 2004	06 01 2005	1707015-A		[illegible]	OPTICAL PATH LENGTH ADJUSTER BASED ON BIREFRINGENT MATERIALS
JP	06-548525	09-01-2004	06-01-2005			[illegible]	OPTICAL PATH LENGTH ADJUSTER BASED ON BIREFRINGENT MATERIALS
US	10/596577	09-01-2004	06 01-2005	2007-0153234 A1		[illegible]	OPTICAL PATH LENGTH ADJUSTER BASED ON BIREFRINGENT MATERIALS
CN	200580002163.2	09 01 2004	06 01 2005	1910459 A		[illegible]	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETIC DISPLAY
DE	05702604 9	09-01-2004	06-01-2005		[illegible]	[illegible]	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETIC DISPLAY
FR	05702604.9	09-01-2004	06 01 2005		[illegible]	[illegible]	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETIC DISPLAY
GB	05702604.9	09-01-2004	06 01 2005		[illegible]	[illegible]	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETIC DISPLAY
JP	06-548527	09-01-2004	06-01-2005			[illegible]	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETIC DISPLAY
US	10/596692	09-01-2004	06 01-2005	2009-0021824 A1		GB040011	OPTICAL PATH LENGTH ADJUSTER FOR VOLUMETIC DISPLAY
CN	200580002164.7	09-01-2004	[illegible]	[illegible]		GB040012	A THREE-DIMENSIONAL DISPLAY
EP	05702606.4	09-01-2004	06-01-2005	1707014-A		GB040012	A THREE-DIMENSIONAL DISPLAY
US	10/596684	09 01 2004	06 01 2005	2007 0146358-A1		GB040012	A THREE-DIMENSIONAL DISPLAY
CN	200580005469.3	21-02-2004	[illegible]	[illegible]		GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
EP	05703000.9	21-02-2004	[illegible]	[illegible]		GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
JP	06-553753	21-02 2004	[illegible]			GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
KR	10 2006-7016525	21-02-2004	[illegible]			[illegible]	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
TW	094104886	21-02-2004	[illegible]	[illegible]		GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
US	10/598016	21 02-2004	[illegible]	[illegible]		GB040042	NONUNIFORM PIXELS TO ENHANCE IMAGE QUALITY 3D DISPLAY
CN	200580005304 6	21-02-2004	[illegible]	[illegible]		GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
DE	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
FR	05702995 1	21 02 2004	[illegible]		1716446	GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
GB	05702995 1	[illegible]	[illegible]		1716446	GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
JP	06-553750	[illegible]	[illegible]			GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
US	[illegible]	21-02-2004	17 02-2005	2007 0139760 A1		GB040043	AN OPTICAL PATH LENGTH ADJUSTER BASED ON A WIRE GRID POLARIS
CN	[illegible]	[illegible]	14-03-2006	101142823A	200680008560 X	GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
EP	06711095 7	17-03-2005	14-03-2006	1862016-A		GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
JP	08-501476	17-03-2005	14-03-2006			GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
KR	10-2007-7020901	17-03-2005	14-03-2006			GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
TW	095108593	17-03-2005	[illegible]	[illegible]		GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
US	[illegible]	17-03-2005	14-03-2006	2008-0191366-A1		GB050038	COLOUR FILTER ARRANGEMENT FOR OPTIMISED 2D/3D DISPLAY
CN	95191063.9	09-09-1994	01-09-1995	1137247-A	[illegible]	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
DE	95928598 2	09-09-1994	01-09-1995	0734314-A1	[illegible]	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
FR	95928598 2	09-09-1994	01-09-1995	0734314-A1	[illegible]	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
GB	95928598.2	09-09-1994	01-09-1995	0734314-A1	[illegible]	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
JP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
KR	96-702394	09 09-1994	01-09-1995	96 0705666	[illegible]	N 014976	METHOD OF MANUFACTURING MECHANICALLY A MICROLENS ARRAY
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FR	[illegible]	[illegible]	[illegible]	[illegible]	0809913	[illegible]	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
GB	[illegible]	[illegible]	09-12-1996	0809913-A1	[illegible]	[illegible]	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
JP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
KR	[illegible]	19-12-1995	09-12-1996	10-1998-0702517	0445209	N 015875	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
US	[illegible]	19-12-1995	18-12-1996		5929859	N 015875	PARALLACTIC DEPTH-DEPENDENT PIXEL SHIFTS
DE	[illegible]	21-11-1996	20-10-1997	0877991-A1	69718291.6	N 016076	MULTI-LAYER TEXTURE MAPS
FR	[illegible]	21-11-1996	20-10-1997	0877991-A1	0877991	N 016076	MULTI-LAYER TEXTURE MAPS
GB	[illegible]	[illegible]	20-10-1997	0877991 A1	0877991	N 016076	MULTI-LAYER TEXTURE MAPS
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DE	99942625.7	01-04-1998	22 03-1999		69936029.3	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
FR	99942625 7	01-04 1998	22-03-1999		0986906	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
GB	99942625 7	01-04-1998	22-03-1999		0986906	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
JP	[illegible]	[illegible]	[illegible]	[illegible]	4236705	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
KR	10-1999-7011234	01-04-1998	22-03-1999	10-2001-0013243	10-0632195	N 016727	FRAME RATE IMPROVEMENT BY MEANS OF FRAME WARPING
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DE	[illegible]	[illegible]	26-04-2001		[illegible]	NL000276	DEPTH ESTIMATION WITH OCCLUSION
FR	[illegible]	19 05 2000	26 04-2001		[illegible]	NL000276	DEPTH ESTIMATION WITH OCCLUSION
GB	[illegible]	19-05-2000	26-04-2001		[illegible]	NL000276	DEPTH ESTIMATION WITH OCCLUSION
JP	01-586926	19-05-2000	26-04-2001			NL000276	DEPTH ESTIMATION WITH OCCLUSION
KR	10-2002-7000734	19-05 2000	26 04 2001		[illegible]	NL000276	DEPTH ESTIMATION WITH OCCLUSION
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EP	01969670.7	07-09-2000	27-08 2001	1374174 A		NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
JP	[illegible]	07-09-2000	27-08-2001	04-506639		NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
KR	10-2002-7005910	07-09-2000	27-08-2001	10-2002-0067514	10-848112	NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
US	09/945954	07-09-2000	04 05-2001	2002-0054310 A1	7046850	NL000494	PARTIAL SEGMENTATION BASED ON DISTANCE TRANSFORMS
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EP	02727928 0	17-05-2001	16-05-2002	1402477-A		[illegible]	SEGMENTATION BASED ON MOTION VECTORS
KR	10-2003-7000756	17-05-2001	16 05-2002			[illegible]	SEGMENTATION BASED ON MOTION VECTORS
US	10/145071	17-05-2001	14-05-2002	2003-0035583 A1	7120277	[illegible]	SEGMENTATION BASED ON MOTION VECTORS
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EP	02733063 8	29-05 2001	28 05-2002	1407612-A		[illegible]	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
JP	03-500836	29-05-2001	28-05-2002	04-530218	4173440	[illegible]	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
KR	10-2003-7001349	[illegible]	[illegible]			[illegible]	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
US	10/478734	29-05-2001	28 05-2002		7439976	[illegible]	2D COMPATIBLE TRANSMISSION AND CODING FOR 3D IMAGE
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CN	02815878 4	15-08-2001	09-07-2002	1541485-A	[illegible]	NL010563	DEPTH MAP FOR EYE TRACKING IN VIDEO-CONFERENCING
EP	02751481.9	15-08-2001	09 07-2002	1433335-A		NL010563	DEPTH MAP FOR EYE TRACKING IN VIDEO-CONFERENCING
JP	03-521629	15-08-2001	09-07 2002	05-500757	4198054	NL010563	DEPTH MAP FOR EYE TRACKING IN VIDEO-CONFERENCING
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CN	02816287.0	21-08-2001	10 07 2002	1545815 A	02816287 0	NL010576	AUTOSTEREOSCOPIC DISPLAY SYSTEM WITH TWO GRIDS OF LENSES
EP	02751505.3	21-08-2001	10-07-2002	1421797-A		NL010576	AUTOSTEREOSCOPIC DISPLAY SYSTEM WITH TWO GRIDS OF LENSES
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EP	02765271.8	11-10-2001	18-09-2002	1438865-A		NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
JP	03-537315	11-10-2001	18-09-2002	05-506776	4145794	NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
KR	10-2004-7005062	11-10-2001	18-09-2002			NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
TW	091215054	11-10-2001	24-09-2002		UM-214518	NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
US	10/267081	11-10-2001	08-10-2002	2003-0085850-A1	7137344	NL010697	DISPLAY WITH 2D/3D SWITCHING POSSIBILITY
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KR	10-2004-7008967	07-01-2002	09-12-2002			NL020004	DEPTH SCALING
US	10/500350	07-01-2002	09-12-2002	2005-0031232-A1	7167188	NL020004	DEPTH SCALING
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US	10/503424	06-02-2002	23-01-2003	2005-0129312-A1		NL020103	TIME CONSISTENCY AND ACCURACY OF SEGMENTATION
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EP	03708453.8	20-02-2002	04-02-2003	1479366-A		NL020131	3D/2D DISPLAY WITH FLUID LENS PARTS
JP	03-570171	20-02-2002	04-02-2003	05-517991		NL020131	3D/2D DISPLAY WITH FLUID LENS PARTS
KR	10-2004-7013373	20-02-2002	04-02-2003			NL020131	3D/2D DISPLAY WITH FLUID LENS PARTS
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KR	10-2005-7000170	03-07-2002	18-06-2003			NL020620	REFLECTIVE 3D DISPLAY
US	10/520129	03-07-2002	18-06-2003	2005-0254115-A1	7184866	NL020620	REFLECTIVE 3D DISPLAY
CN	200380102638.6	01-11-2002	08-10-2003	1708996		NL021087	3D DISPLAY WITH INTEGRATED RENDERING
EP	03809817.4	01-11-2002	08-10-2003	1561184-A		NL021087	3D DISPLAY WITH INTEGRATED RENDERING
JP	2004-547857	01-11-2002	08-10-2003			NL021087	3D DISPLAY WITH INTEGRATED RENDERING
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CN	200380107977.X	30-12-2002	24-12-2003	1745589-A		NL021409	INTEGRATED VIDEO FILTER FOR STEREO IMAGE RENDERER
EP	03778081.1	30-12-2002	24-12-2003	1582074-A		NL021409	INTEGRATED VIDEO FILTER FOR STEREO IMAGE RENDERER
JP	04-563502	30-12-2002	24-12-2003	06-512833		NL021409	INTEGRATED VIDEO FILTER FOR STEREO IMAGE RENDERER
US	10/540672	30-12-2002	24-12-2003	2006-0078180-A1		NL021409	INTEGRATED VIDEO FILTER FOR STEREO IMAGE RENDERER
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EP	04710110.0	21-02-2003	11-02-2004	1597907-A		NL030170	FULL PARALLAX AUTOSTEREOSCOPIC SYSTEM
JP	06-502578	21-02-2003	11-02-2004			NL030170	FULL PARALLAX AUTOSTEREOSCOPIC SYSTEM
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FR	04713431.5	10-03-2003	27-02-2004		1604266	NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
GB	04713431.5	10-03-2003	27-02-2004		1604266	NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
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US	10/548343	10-03-2003	27-02-2004	2006-0279528-A1		NL030194	MULTI-USER MULTI-VIEW TOUCH SCREEN
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EP	04723630.7	31-03-2003	26-03-2004	1623580-A		NL030299	THREE-DIMENSIONAL DISPLAY
JP	06-506769	31-03-2003	26-03-2004	06-522336		NL030299	THREE-DIMENSIONAL DISPLAY
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CN	200480009021.4	31-03-2003	26-03-2004	1768537-A		NL030300	3D DISPLAY WITH DIRECTIONAL BACKLIGHT
EP	04723661.1	31-03-2003	26-03-2004	1613551-A		NL030300	3D DISPLAY WITH DIRECTIONAL BACKLIGHT
JP	06-506771	31-03-2003	26-03-2004	06-522127		NL030300	3D DISPLAY WITH DIRECTIONAL BACKLIGHT
US	10/550881	31-03-2003	26-03-2004	2006-0262539-A1	7518685	NL030300	3D DISPLAY WITH DIRECTIONAL BACKLIGHT
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ES	04744492.2	11-07-2003	05-07-2004		1658558	NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
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GB	04744492.2	11-07-2003	05-07-2004		1658558	NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
IN	0116/CHENP/2006	11-07-2003	05-07-2004		225040	NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
IT	04744492.2	11-07-2003	05-07-2004		1658558	NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
JP	06-519475	11-07-2003	05-07-2004			NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
KR	10-2006-7000693	11-07-2003	05-07-2004			NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
US	10/563529	11-07-2003	05-07-2004	2006-0192793-A1	7358583	NL030816	3D SCALING BASED ON PROBABILITY OF VISIBILITY
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EP	04744666.7	05-08-2003	28-07-2004	1654884-A		NL030933	DEPTH MAP BASED ON EDGE DETECTION
IN	766/CHENP/2006	05-08-2003	28-07-2004		213206	NL030933	DEPTH MAP BASED ON EDGE DETECTION
JP	06-522466	05-08-2003	28-07-2004			NL030933	DEPTH MAP BASED ON EDGE DETECTION
KR	10-2006-7002454	05-08-2003	28-07-2004			NL030933	DEPTH MAP BASED ON EDGE DETECTION
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EP	04769196.4	17-09-2003	31-08-2004	1665166-A		NL031094	Depth Of Field (DOF) RENDERING
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DE	04770053.4	30-09-2003	22-09-2004		602004007891.7	NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
FR	04770053.4	30-09-2003	22-09-2004		1671276	NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
GB	04770053.4	30-09-2003	22-09-2004		1671276	NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
JP	06-530911	30-09-2003	22-09-2004			NL031170	LIMITED HEAD MOTION IN 3D VISUALISATION
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JP	06-544632	19-12-2003	08-12-2004			NL031480	INCREASE PERSPECTIVE OF 3D DISPLAY IMAGE
KR	10-2006-7012108	19-12-2003	08-12-2004			NL031480	INCREASE PERSPECTIVE OF 3D DISPLAY IMAGE
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KR	10-2006-7018261	12-03-2004	01-03-2005			NL040243	DEPTH FROM CURVATURE
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EP	05718674.4	14-04-2004	08-04-2005	1738331-A		NL040363	METHOD FOR REDUCTION OF GHOST ARTEFACTS FOR RENDERING 2.75D
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EP	05718826.4	13-04-2004	04-04-2005	1738569-A		NL040376	3D DISPLAY WITH ELECTROWETTING LENTICULAR SCREEN
JP	07-507828	13-04-2004	04-04-2005			NL040376	3D DISPLAY WITH ELECTROWETTING LENTICULAR SCREEN
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CN	200580034913 4	13-10-2004	[illegible]	[illegible]		NL041117	OUT OF FOCUS LENTICULAR FOR 3D
EP	05784501 2	13-10-2004	[illegible]	[illegible]		NL041117	OUT OF FOCUS LENTICULAR FOR 3D
JP	2007-536297	13-10-2004	[illegible]			NL041117	OUT OF FOCUS LENTICULAR FOR 3D
US	[illegible]	13-10-2004	26-09-2005	2007-0247708-A1		NL041117	OUT OF FOCUS LENTICULAR FOR 3D
CN	200580036903 4	26-10-2004	21-10-2005	101048803-A		NL041196	FOCUS BASED DEPTH RENDERING
EP	05819890 4	26-10-2004	21-10-2005	1807806-A		NL041196	FOCUS BASED DEPTH RENDERING
JP	[illegible]	26-10-2004	21-10-2005			NL041196	FOCUS BASED DEPTH RENDERING
US	[illegible]	26-10-2004	[illegible]	[illegible]		NL041196	FOCUS BASED DEPTH RENDERING
CN	200580039226 1	16-11-2004	[illegible]	[illegible]		NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
DE	05802412 6	16-11-2004	08-11-2005		602005006836 8	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
ES	05802412.6	16-11-2004	08-11-2005		1815441	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
FR	05802412.6	16-11-2004	08-11-2005		[illegible]	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
GB	05802412 6	16-11-2004	08-11-2005		1815441	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
IN	2072/CHENP/2007	16-11-2004	08-11-2005			NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
IT	05802412.6	16-11-2004	08-11-2005		1815441	NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
JP	07-540788	16-11-2004	08-11-2005			NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
US	11/718917	16-11-2004	08-11-2005	2008-0187222-A1		NL041259	METHOD FOR RENDERING BASED ON IMAGE SEGMENTATION
CN	200580039292.9	18-11-2004	07-11-2005	101061416-A		NL041261	2D - 3D POLARISING BACKLIGHT
DE	05800635.4	18-11-2004	07-11-2005		602005016007.8	NL041261	2D - 3D POLARISING BACKLIGHT
FR	[illegible]	18-11-2004	07-11-2005		1815288	NL041261	2D - 3D POLARISING BACKLIGHT
GB	05800635 4	18-11-2004	07-11-2005		1815288	NL041261	2D - 3D POLARISING BACKLIGHT
JP	07-542277	18-11-2004	07-11-2005			NL041261	2D - 3D POLARISING BACKLIGHT
US	11/719234	18-11-2004	07-11-2005	[illegible]		NL041261	2D - 3D POLARISING BACKLIGHT
CN	[illegible]	24-11-2004	07-11-2005	[illegible]		NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
DE	[illegible]	24-11-2004	07-11-2005		602005007376 7	NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
FR	[illegible]	24-11-2004	07-11-2005		1817624	NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
GB	[illegible]	24-11-2004	07-11-2005		1817624	NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
JP	07-542374	24-11-2004	07-11-2005			NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
KR	10-2007-7011545	24-11-2004	07-11-2005			NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
US	11/719779	24-11-2004	07-11-2005	2009-0147160-A1		NL041318	FOURTH COMPENSATION LAYER IN 2D/3D DISPLAY
CN	200580041772.9	06-12-2004	05-12-2005	101073275-A		NL041369	DRIVING METHOD FOR STEREOSCOPICDISPLAY DEVICE
EP	[illegible]	06-12-2004	05-12-2005	1825691-A		NL041369	DRIVING METHOD FOR STEREOSCOPICDISPLAY DEVICE
JP	[illegible]	06-12-2004	05-12-2005			NL041369	DRIVING METHOD FOR STEREOSCOPICDISPLAY DEVICE
KR	10-2007-7012482	06-12-2004	05-12-2005			NL041369	DRIVING METHOD FOR STEREOSCOPICDISPLAY DEVICE
US	[illegible]	06-12-2004	05-12-2005	2009-0128474-A1		NL041369	DRIVING METHOD FOR STEREOSCOPICDISPLAY DEVICE
CN	[illegible]	12-03-2004	04-03-2005	1930512A	200580007684.7	NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
EP	[illegible]	12-03-2004	04-03-2005	1728116-A		NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
IN	3761/CHENP/2006	12-03-2004	04-03-2005			NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
JP	07-502478	12-03-2004	04-03-2005			NL050007	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
US	[illegible]	12-03-2004	04-03-2005	2007-0177006-A1		[illegible]	3D DISPLAY WITH CONTINOUS CYCLIC VIEWS II
CN	[illegible]	12-01-2005	12-01-2006	101103320-A	[illegible]	[illegible]	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
DE	[illegible]	12-01-2005	12-01-2006		[illegible]	[illegible]	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
ES	06710664 1	12-01-2005	12-01-2006		[illegible]	[illegible]	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
FR	06710664 1	12-01-2005	12-01-2006		[illegible]	[illegible]	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
GB	06710664.1	12-01-2005	12-01-2006		[illegible]	[illegible]	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
IN	[illegible]	12-01-2005	12-01-2006			NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
IT	[illegible]	12-01-2005	12-01-2006		1839267	NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
JP	[illegible]	12-01-2005	12-01-2006			NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
KR	[illegible]	12-01-2005	12-01-2006			NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
US	[illegible]	12-01-2005	12-01-2006	2009-0003725-A1		NL050009	INCREASING DEPTH PERCEPTION BY ADDING STRUCTURES
CN	200580005096 X	17-02-2004	07-02-2005	1922631-A	200580005096 X	NL050010	DEPTH FROM PATH TO BORDER
DE	05702909 2	17-02-2004	07-02-2005		602005004125 7	NL050010	DEPTH FROM PATH TO BORDER
FR	05702909 2	17-02-2004	07-02-2005		1719079	NL050010	DEPTH FROM PATH TO BORDER
GB	05702909 2	17-02-2004	07-02-2005		1719079	NL050010	DEPTH FROM PATH TO BORDER
IN	[illegible]	17-02-2004	07-02-2005			NL050010	DEPTH FROM PATH TO BORDER
JP	06 553726	17-02-2004	07-02-2005			NL050010	DEPTH FROM PATH TO BORDER
KR	10-2006-7016549	17-02-2004	07-02-2005			NL050010	DEPTH FROM PATH TO BORDER
US	10/597976	17-02-2004	07-02-2005	2007-0146232 A1		NL050010	DEPTH FROM PATH TO BORDER
CN	200680002547 9	18-01-2005	12-01-2006	101107644-A		NL050033	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
EP	06710666.6	18-01-2005	12-01-2006	1842179-A		[illegible]	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
IN	3135/CHENP/2007	18-01-2005	12-01-2006			[illegible]	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
JP	07-550910	18-01-2005	12-01-2006			[illegible]	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
US	11/814098	18-01-2005	12-01-2006	2009-0115800-A1		[illegible]	APPLY SHIFT IN SAMPLE ON BASIS OF LENS POSITION
CN	03815087.5	27-06-2002	10-06-2003	1666137	03815087 5	[illegible]	ELECTRICALLY CONFIGURABLE PHOTONIC CRYSTAL
EP	03735892 6	27-06-2002	10-06-2003	1520202-A		[illegible]	ELECTRICALLY CONFIGURABLE PHOTONIC CRYSTAL
JP	04-517085	27-06-2002	10-06-2003			[illegible]	ELECTRICALLY CONFIGURABLE PHOTONIC CRYSTAL
US	10/183803	27-06-2002	27-06-2002	2004-0001246 A1	6738178	[illegible]	ELECTRICALLY CONFIGURABLE PHOTONIC CRYSTAL

Schedule B
Licensed Know-How and Licensed Software

The Licensed Know-How is based on the 3D Technology, developed by the former Philips incubator 3DSolutions, and implemented in several prototypes.
The Licensed Know-How includes:

1. available technical documentation on product designs, manufacturing process description and equipment specifications,
2. available rendering firmware,
3. available 3D content creation software.

The Licensed Know-How will be provided "as-is" and is handed over by enabling access for Licensees employees to the documentation, firmware and software relevant to the 3D Technology.

Details on [1] technical documentation on product designs, manufacturing process description and equipment specifications:

- all documentation which is available in 3 archives:
    - TPD archive
    - Software archive
    - Departmental archive
- Lens design software

Details on [2] rendering firmware:

- Firmware archive (including schematics of Hydra, Spartak, SpartakNext)
- Firmware download tool

Details on [3] 3D content creation software:

- Software:
    - Display control tool
    - Player API
    - MediaPlayer9
    - Settings API
    - Monitor540_1080
    - MediaSequencer
    - WOWzone application
    - WOWvx Player
    - WOWvx Spacer
    - WOWvx BlueBox server
    - WOWvx BlueBox configurator
    - Compositor
    - BlueBox server configuration scripts
    - DirectX visualize
    - OpenGL control & visualiser
    - B3D source filter

  - 3DS MAX rendering plugins
  - Maya rendering plugins
  - Red Box
- Description of the software
- Documentation / manuals, when available.

3D prototype equipment and he use of 3D prototype equipment is not included in the Licensed Know-How. This equipment is managed by Philips Miplaza; Licensee can discuss access to the equipment via a rental arrangement to be agreed upon and signed between Licensee and Philips MiPlaza.

Equipment, prototype displays, components or other types of physical subjects are not included in the Licensed Know-How.

Philips remains the owner of the Licensed Know-How. Where available, a copy of the documentation, firmware and software will be provided.

The hand-over period will end 6 months after the effective date of the Agreement.

CONFIDENTIAL

Schedule C
running royalty

[1] Royalty fee applicable to hardware sales by 3DFusion and / or its Affiliates (e.g. 3D Displays and 3D Rendering Box):

1,5% on Total Net Turnover, with a minimum of:

3D Display Size	Up to 6"	6"-9.9"	10"-13.9"	14"-19.9"	20"-26.9"	27"-36.9"	37" and up
Royalty (Euro)	1.00	1.25	2.00	3.00	4.00	6.00	9.00
Royalty fee per 3D Rendering Box: 9.00 euro							

[2] Royalty fee applicable to delivery of 3D Content Services by 3DFusion and / or its Affiliates and 3D Content Creation Tools by 3DFusion and / or its Affiliates:

3% on Total Net Turnover.

"Total Net Turnover" shall mean all revenue generated by or for Licensee through the sale or other disposal of Licensed Products to customers less duties and sales taxes actually incurred by Licensee.

The rate of exchange for the minimum royalty fee from Euro to US Dollar shall be the European Central Bank (ECB) fixing rate of the relevant currency as officially quoted by the European Central Bank for payment of currency transactions on the day that the amount is due and payable.

Schedule D
Royalty Reporting Form

Koninklijke Philips Electronics N.V.
c/o Philips Intellectual Property & Standards
GSA and Licenses Administration Department
P.O. Box 220
5600 AE Eindhoven
The Netherlands
Fax no.: + 31 40 27 45267

Date:
Company name:
Manufacturing site:
City:
Country:

Reference: Royalties

This is to provide you with our royalty statement under the Technology Licensing Agreement of [date] between our companies, which covers the relevant business of Licensed Products for the [*1st, 2nd, 3rd, 4th*] calendar quarter of [year]. The total fee is to be calculated in conformity with Section 4.2 of and Schedule C to said agreement.

Licensed Product, (serial number)	Description	Applicable Royalty Rate	Calculation of Applicable Royalty Amount		Total Royalty fee due in Euro
				Gross amount due	
				Less withholding tax (if applicable)	
				Net amount due	

I attest that the above is true, complete and accurate.

Signed on behalf of 3D Fusion
Name:
Title:

EFiled: Oct 21 2022 02:41PM EDT
Transaction ID 68288444
Case No. 2020-0766-JTL

EXHIBIT 8

IN THE UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF DELAWARE

In re:	)	Chapter 7
Stream TV Networks, Inc.	)	Case No. 21-10848 (KBO)
	)	**Related to D.I. 22**
Alleged Debtor	)	

DECLARATION OF CHRISTOPHER MICHAELS
IN SUPPORT OF THE OBJECTION OF THE PETITIONING CREDITORS
TO THE EMERGENCY MOTION TO DISMISS

1) My name is Christopher Michaels. I am the President/CEO of Brown & Michaels, PC and represent Rembrandt 3D Holding Ltd. ("Rembrandt - Holding") a Nevis corporation. I also represent Rembrandt 3D Corp. ("Rembrandt – Delaware") a Delaware corporation and Stephen Blumenthal personally.

2) The following facts are within my personal knowledge, except as noted, and are true and correct. I file this Declaration under 28 U.S.C. § 1746.

3) I am a patent attorney with years of experience in the TV and video display industry.

4) For many years, I was the managing attorney for our representation of Lucent and their patent work arising out of Bell Labs (arguably where TV was invented - https://www.earlytelevision.org/bell_labs.html). I have worked for a number of companies and inventors in the display industry. I written many patents for new types of displays, methods of making displays, and the materials used in those displays. I took on an officer role first as VP of Business Development, and then CEO of a client, Nupix, LLC, a novel display developer.

5) I am familiar with typical licensing terms in numerous industries, but in particular, I have written and negotiated many license and development agreements in the display

industry. As both attorney and officer, I negotiated licenses and joint development agreements with Corning, eInks, Gyricon (subsidiary of Xerox), and Kent Displays.

6) I have also worked with a number of private equity fund clients that ask me to review and advise them on intellectual property strategy for their portfolio companies.

7) I am a founding member and was on the original management team of a seed stage venture capital/investment club fund, WEMBA 38 Investment Club LLC.

8) While I prosecuted many patent applications over the years, my current focus is mostly in business consulting, technology strategy and licensing.

9) I studied inventory and production control at Stanford Engineering before deciding to go to the Wharton School to earn a master's in business administration with concentrations in finance and operations and information management.

10) I still take on officer roles for a number of clients and typically serve as CEO, CFO, or as VP of Business Development. I only take on such roles for developing technology based companies.

11) I have been involved in a number of patent enforcement actions, but I do not work with my clients as litigation counsel. My role is limited to strategic analysis of intellectual property issues and valuation of the technology.

12) I have taken courses in mediation and recommend mediation as a dispute resolution practice to many of my clients.

13) I have known Stephen Blumenthal since approximately 1990. He contacted me and asked me to assist to assist Rembrandt-Holding in an upcoming mediation with Stream TV Network, Inc. ("Stream").

14) While I had no part in preparing the original or first amended complaint (attached as Exhibit 1), I reviewed the first amended complaint, all exhibits, and the license

agreement between 3D Fusion and Philips (Exhibit 7) in preparation for attending the in person mediation. I also reviewed as much as I could regarding the Stream products, their patents, and their website.

15) Of the documents useful to establishing a reasonable royalty, the Philips agreement (Exhibit 7) was the best example of a third party arm's length license to serve as a benchmark.

16) Philips is well known to own a large portfolio of intellectual property rights and to be experts in licensing that technology. Their 2019 annual report states the following: *"Royal Philips' total IP portfolio currently consists of 64,500 patent rights, 39,000 trademarks, 88,500 design rights and 3,200 domain names. Philips filed 1,015 new patents in 2019, with a strong focus on the growth areas in health technology services and solutions. Philips earns substantial annual income from license fees and royalties. These are mostly earned on the basis of usage or fixed fees, recognized over the term of the contract or at a point in time."*

17) Philips had a large portfolio of patents in the glasses free 3D market and marketed products under its WOWvx platform, but ultimately decided to exit the business itself in 2009. It was willing to license its technology and spun out a company with a license, Dimenco https://www.dimenco.eu/about-us.

18) While the promise of the technology was exciting, the technology in the hands for Philips had a number of problems. Licensing a technology that did not work completely and was developed in a business unit that a well-funded patent owner chooses to abandon, can lead to a significantly lower valuation than licensing a working technology.

19) I attended an in person settlement conference on July 18, 2018 (the "First Mediation

Conference"). [Dkt# 58] Raja Rajan attended the First Mediation Conference with Mr. Neal Kronley of DLA Piper (former counsel to Defendants). I was accompanied by Stephen Blumenthal, the sole director and officer of Rembrandt-Holding, and litigation counsel Chi Eng.

20) At the First Mediation Conference, Mr. Blumenthal demonstrated the Rembrandt-Holding technology using what he identified as the original 3DFusion equipment share with Stream in 2010. This identical equipment looked identical to the equipment shown in in a news article dated January 25, 2011 published by The Flying Kite Media, a Philadelphia based online magazine (the "2011 News Article"), wherein Defendants showcased 3DFusion's laptop and video content. (Ex. 1, 2011 News Article entitled "how philly is leading the glasses-free 3d revolution").

21) Having such published photographic evidence of a defendant company claiming credit for the plaintiff's technology is rare and was a compelling beginning to the mediation. Collectively, the Rembrandt-Holding team took the unwavering position that every Stream TV incorporated the Rembrandt-Holding know-how, trade secrets, and needed a license to the Rembrandt-Holding patents. Our primary purpose was to discuss a business resolution, but at times it was helpful to pull out additional documentation and evidence demonstrating that the technology had been developed by Mr. Blumenthal prior to meeting the Rajans or Stream.

22) Eventually, negotiations progressed to the point where Stream started to take several actions to build good will.

23) After a compelling showing that U.S. patent application 14/428,866 included technology invented by Mr. Blumenthal, Stream had its wholly owned subsidiary Ultra-D Coöperatief U.A. in Einhoven, Netherlands abandon the patent application.

24) In my experience as a patent attorney, abandoning a pending application during such negotiations is a rare action and the fact that Stream did so, built good will to proceed with settlement negotiations.

25) Stream also provided several of their 4K TVs by sending them to various locations across the country for consultants to Rembrandt-Holding to evaluate at no charge which also paved the way for further settlement discussions.

26) Stephen Blumenthal reports that he worked with the original Philips WOWvx technology and got it working. Mr. Blumenthal demonstrated the old technology and hardware Philips had developed and the hardware/software demonstrated by Rembrandt 3D Corp and the difference is remarkable. I have also seen the Stream 4K television unit shipped during settlement negotiations and compared it to the other 3D technologies demonstrated by Mr. Blumenthal.

27) Working with the content tools and hardware that Mr. Blumenthal had developed with 3D Fusion, Mr. Blumenthal was able to demonstrate that he was able to create content optimized for a 3D display to obtain 3D effects to make images appear with depth inward from the face of the screen ("screen back") and outward from the face of the screen ("forward pop") on multiple displays not made by Stream. We measured the image effects on TVs made by companies other than Stream relative to the diagonal size of the display against the Stream TV provided for evaluation.

28) Mr. Blumenthal was able to create images that provided further screen back and greater forward pop with other TVs but it required use of his technology to avoid artifacts and always looked best when Mr. Blumenthal optimized the content. In other words, the Philips TV technology and other manufacturer's glasses free 3D displays all had issues until Mr. Blumenthal applied his technology to correct those

defects. However, the Stream TV was able to convert a wide variety of content and looked very good. Our assessment was that the Stream TV was a very good implementation of the Rembrandt-Holding technology that Mr. Blumenthal had disclosed years earlier.

29) We compared the patent claims element by element to the Steam TV and it was clear that use of the Stream TV infringed the Rembrandt-Holding patents.

30) From a strategic and valuation perspective, it was clear that: 1) Rembrandt-Holding and Rembrandt-Delaware did not require access to the Stream TV or UltraD technology to provide excellent quality 3D displays; and 2) Stream made a very good product that was a good enough implementation of the Rembrandt-Holding technology for many circumstances. In other words, Stream needed a license from Rembrandt-Holding to sell any product, but Rembrandt-Holding and Rembrandt-Delaware were not dependent on Stream. However, Stream's product was impressive enough that it made sense to work a purchase of future products into a settlement. These strategic considerations drove the mediation and negotiation process.

31) I recommended that Rembrandt-Holding negotiate for some cash, but that a right to purchase product on favorable terms would provide excellent value to Rembrandt-Holding because Rembrandt-Holding and Rembrandt-Delaware could include them in their products.

32) For the following six months, the parties corresponded settlement terms via email and conducted several in-person settlement conferences at Stream offices in Philadelphia with Mr. Blumenthal and me representing the Rembrandt-Holding, and Raja Rajan representing the Defendants. The parties did not resolve their differences.

33) On January 11, 2019, Magistrate Judge Parker ordered the parties to attend a second

settlement conference in person with counsel on April 9, 2019 (the "Second Mediation Conference"). [Dkt# 67]

34) At the Second Mediation Conference, Stream was represented by its Chief Financial Officer, Shad Stastney, and its counsel Neil Kronley and John Wellschlager.

35) During the Second Mediation Conference, the parties reached the terms of an agreement and a term sheet was prepared by Stream's counsel that was initialed by Shad Stastney, Stephen Blumenthal, and Magistrate Parker and I have attached a copy of this term sheet initialed by Shad Stastney as Exhibit 2.

36) This term sheet provided for Stream to license Rembrandt-Holding's:

   a. "*Knowhow and trade secrets related to methodology for:*

      i. *efficiently converting, correcting and optimizing a 2D+Depth video for playback on a 3D autostereoscopic associated with the Philips technology*

      ii. *utilizing the Philips 2d Switchable Lens technology for refractive and detractive lens switching for the creation of the 'lightfield' and 3d content artefact correction.*

      iii. *utilizing the On Screen Display functions of Borders and "Liveliness."*

   b. *Trademarks*

   c. *the patents asserted in Rembrandt's First Amended Complaint, and dismissed by the Court on March 28, 2018 (ECF No. 47}"* (See Schedule A of the April 9, 2019 term sheet – Exhibit 2)

37) Schedule A was prepared with care and while short, identified the specific technology that was provided by Mr. Blumenthal and incorporated into Stream's products. Having evaluated the Stream TV directly, it was and is my opinion that every TV sold

by Stream incorporated the enumerated know-how and trade secrets and but for the license, infringed the patents referenced in the term sheet. This settlement was essential for Stream to continue selling product free of infringement allegations.

38) Stream agreed to pay Rembrandt-Holding $5,840,000 in cash, 2,000,000 warrants to purchase Stream stock, 100 4K TVs for no charge, 8 8K prototypes at no charge, and the right to purchase 3,015,000 units at cost.

39) At each mediation, Mr. Blumenthal emphasized that he wanted his companies to be one of Stream's largest customers and that the most important aspect of the deal was the right to purchase products. That said, he knew that Philips charged at least $5,000,000 for a license with royalty minimums and that seemed like a reasonable floor for the cash component of the deal.

40) Rembrandt-Delaware previously purchased a Stream TV for $5,250, so we estimated the value of the no charge TVs and the 8K prototypes to be about $567,000.

41) We assessed that Stream was either going to fail rendering the warrants worthless or succeed making many billions in profit such that the value of the warrants would likely be worth tens of millions of dollars. Offering warrants made sense for Stream as it was a cashless component of the deal at the time, but also provided Rembrandt-Holding a strong incentive to support Stream's success.

42) We estimated Stream's margin was approximately $400/unit so the ability to purchase 3,015,000 units at cost was worth approximately $400/unit x 3,015,000 units = $1,206,000,000.

43) In other words, the total value of the settlement agreement between Stream and Rembrandt-Holding is far greater than all the secured and unsecured Stream creditors' claims combined. In addition, if Rembrandt-Holding was to fully capture the value of

its negotiated settlement, it would need to find a market for millions of Stream's products.

44) To my knowledge, no other company has as many working installations of glasses free 3D displays as Rembrandt-Delaware. To have the leading company in glasses free 3D displays supporting Stream and the sale of its products is a major asset to Stream that has long last value.

45) During negotiations, I built a simple spreadsheet model to calculate the relative value of each component of the settlement and we were able to compare various offers proposed by each side.

46) As we were attempting to finalize the documents for settlement, we were contacted by counsel for Stream and asked to meet in person to make adjustments to the April 9, 2019 term sheet but promised that Stream intended to maintain the net present value of the April 9, 2019 terms.

47) We met with Shad Stastney, Mark Colemen (director of Stream), Neil Kronley, and John Welschlager on July 8, 2019. I attended with Stephen Blumenthal and counsel, Chi Eng and Neil Wallace.

48) During our meeting, Mr. Stastney explained that Stream's production was delayed and he requested flexibility on timing of payments and shipments of products. We asked a number of questions over the day, but I asked Mr. Stastney a series of specific questions about the expected production costs, production capacity, and the expected margin. As Mr. Stastney answered, I typed the answers into a computer and was using it to work with my valuation model. The fact that I was entering the data into my computer was obvious to everyone in the room. I later reviewed the spreadsheet model with Mr. Blumenthal and we evaluated how the proposed modifications to the

April 9, 2019 term sheet so we could assess whether the new proposals matched the net present value of the April 9, 2019 term sheet. Over the course of the day, I used my model to explain to everyone in the room that a particular proposal did not maintain the net present value and we would modify the terms until Mr. Blumenthal was satisfied that we were making reasonable modifications that preserved the value or the April 9, 2019 term sheet.

49) I specifically asked Mr. Stastney about the margins for Stream's products and Mr. Stastney told us that it would be about $400/unit during early commercial scale production and then drop to as low as $120/unit during very high volume production in later years.

50) While our settlement agreement provides a right to purchase products at cost, I specifically discussed with Stream's various representatives that increasing Stream's volume of production would allow Stream to lower its production costs across all products such that Stream could command higher margins from other customer sales.

51) At all times, Mr. Stastney proceeded with the expectation that sales to other customers of Stream would far exceed sales to Rembrandt-Holding. At various times, he stated that he did not expect sales to Rembrandt-Holding to exceed 5-10% of the total capacity of Stream.

52) While 5-10% of Stream's production capacity would still make Rembrandt-Holding one of the largest customers, the profits that Stream would be able to make by fully using the technology licensed by Rembrandt-Holding is 10-20 times the cost of obtaining the license from Rembrandt-Holding. If the value of the settlement agreement to Rembrandt-Holding is hundreds of millions of dollars, the value of having the license to Stream is billions of dollars.

53) I make these statements employing a high level of academic training in production forecasting and accounting as well as practical experience as an officer of technology companies and one called upon to advise private equity companies on valuing technology portfolios, but frankly, one does not need my level of expertise or training to follow the valuation.

54) The settlement agreement terms are clear on their face and provide significant value to Rembrandt-Holding in both defined amounts of revenue and product purchase rights. No reasonable company or person, pays more for a technology license than it can generate in profit from that license and in almost all cases, licensees hope to make very large multiples of the amounts paid for a license in profit from implementing the business contemplated by the license.

55) Shad Stastney is a well-educated CFO and experienced in financial markets. Unless he was purposefully looking to destroy Stream, he reasonably knew that the value of Stream would increase dramatically with the execution of a license to the Rembrandt-Holding technology. More specifically, any reasonable business decision maker would have expected the value of Stream to increase by hundreds of millions to billions of dollars after agreeing to the terms on April 9, 2019.

56) I knew that our settlement agreement with Stream was advantageous to both sides and dramatically increasing Stream's production would help Stream achieve a positive cash flow much faster while creating significant value for Rembrandt-Holding and based on our conversations over two days of in-person negotiations largely focused on these issues, I believe that Shad Stastney shared the same opinion when we reached agreement.

57) I confirmed directly with Mr. Stastney that the value the ability to purchase units at

cost was $400/unit at the beginning trending to $120/unit at high volumes such that the value to Rembrandt-Holding of the right to purchase at cost products was approximately $360,000,000 to $1,206,000,000.

58) At some point after our July 8, 2019 meeting, Stream's management and board of directors went through turn over and Stream fired DLA Piper as its litigation counsel. It was very challenging to get anyone to respond to our requests to complete the settlement, so Rembrandt-Holding eventually filed a motion to enforce the April 9, 2019 term sheet.

59) I reached out to Shad Stastney after he left Stream because I knew that he ran the fund that was Stream's first position lender. Mr. Stastney took my call and it was cordial, but he quickly told me that things were happening that he could not disclose and asked if he could call me in a few weeks after they resolved. He never called me back.

60) I also reached out to representatives of Hawk, the second position secured lender, and received a similar response.

61) I learned that a group of shareholders were suing Stream and were represented by Eben Colby. I spoke to Mr. Colby on February 18, 2020 and explained the Rembrandt-Holding litigation with Stream. He indicated that he would discuss the matter with his internal patent attorney partners and get back to me. He never called me back.

62) I later spoke to Mr. Stastney after I became aware of the Omnibus Agreement and asked about SeeCubic's plan to obtain a license to the Rembrandt-Holding technology. He explained that he felt the obligation to pay for any license rested with Stream and that SeeCubic had rights to all the technology of Stream. I pointed out

that Stream had no power to transfer our license to SeeCubic. He stated that SeeCubic did not plan to manufacture anything, but rather just license out rights to Ultra-D. I pointed out that both the Rembrandt-Holding agreement with Stream and the Philips license prohibited both assignment and sublicensing. He seemed surprised by this information and ended the call claiming that he did not feel that was a problem.

63) As an expert in intellectual property licensing, I don't think Mr. Stastney's stated business plan for merely licensing technology rather than manufacturing is a viable strategy and is likely completely prohibited by both the Philips license and the Rembrandt-Holding technology rights.

64) It does not appear SeeCubic's business plans and the fact that they are just not permitted by the various underlying technology rights of Philips or Rembrandt-Holding were understood by the various parties to the Omnibus Agreement of the litigations in the prior bankruptcy proceeding or Delaware Chancery court action.

65) I spoke with Mr. Stastney, Hawk's representative, and Even Colby all well prior to any of them signing the Omnibus Agreement. They all knew about Rembrandt-Holding and its claims regarding the technology.

66) Mr. Stastney specifically knew that he had negotiated to a term sheet before a Magistrate Parker indicating the technology was worth millions in cash payments and a right to purchase TVs and provided the information that shows such a right was worth up to $1.2 billion dollars.

67) However, neither SLS, SeeCubic, Hawk, Mr. Stastney or Mr. Colby made the court aware that the Stream technology used in its TVs incorporated technology owned by Rembrandt-Holding and that transferring such technology to SeeCubic would further

misappropriate Rembrandt-Holding technology or that SeeCubic's business plans are prohibited under the terms of the Philips license.

68) At a bare minimum, Mr. Colby and Mr. Stastney could be under no reasonable delusion that Rembrandt-Holding was going to sit idly by and let SeeCubic use its technology without further litigation, yet they made no mention of it to the Chancery court or in the Stream Chapter 11 bankruptcy motion to dismiss.

69) I do not know if Mr. Colby explained to his representative shareholder clients that their rights in SeeCubic could be severely compromised by Rembrandt-Holding's claim prior to their entering the Omnibus Agreement, but it seems highly unlikely that they would have agreed to it if he had.

70) I don't know if counsel to the creditors were informed of Rembrandt-Holding's claim or the limitations of the Philips agreement when they agreed to be paid from SeeCubic, but it also seems highly unlikely that any reasonable creditor would voluntarily choose to work with SeeCubic knowing that it has no rights to license technology or execute its stated business plan.

71) I do not know if Mr. Stastney discussed the Rembrandt-Holding claim with potential investors in SeeCubic despite his intimate knowledge of both the claims and the value of the April 9, 2019 settlement term sheet he negotiated, but it seems unlikely that any informed investor would make any investment in SeeCubic if they knew of the Rembrandt-Holding claim or limitations of the Philips license.

72) Clearly, the settlement terms were covered by the protective order, but the Rembrandt-Holding complaint against Stream was publicly available on PACER and could have freely have been shared with all parties and the Chancery court but does not appear to have even been mentioned.

73) The motion to enforce was still pending when I learned that Stream had filed for bankruptcy. Chi Eng was asked to attempt to contact litigation counsel for Stream regarding informing the district court about the bankruptcy and stay, but received no response, so Chi Eng notified the court of the pending bankruptcy and the automatic stay. The court extended the response time on the motion.

74) I sent emails to Stream's bankruptcy counsel (Exhibit 3), the counsel for creditors (Exhibit 4,) and the counsel for SeeCubic (Exhibit 5) on April 20, 2021 to make sure they all knew about our claim and to invite resolution. Only Stream's counsel responded to my communications.

75) Despite having communicated with all represented parties' counsels in the Stream Chapter 11 prior bankruptcy proceeding, Rembrandt-Holding has not been provided any notice of any motions in any proceeding in the bankruptcy court or Delaware Chancery court.

76) Rembrandt-Holding was not a party to the Omnibus Agreement, yet Shad Stastney, Eben Coffer, Stream, and the Rajans were all well aware of our allegations that all Stream technology infringed the rights held by Rembrandt-Holding. They all knew that Stream had no right to transfer any rights to Rembrandt-Holding technology to SeeCubic.

77) It appears that Shad Stastney decided not to disclose to either the Chancery Court or the Bankruptcy Court that he personally represented Stream in our settlement negotiations and initialed the April 9, 2019 term sheet providing Rembrandt-Holding the settlement terms including over $6,400,000 in cash and free TVs, 2,000,000 warrants, plus the right to purchase new TVs at a collective discount of $1.2 billion.

78) After the bankruptcy case was dismissed, we were able to complete the settlement

agreement between Stream and Rembrandt-Holding on May 23, 2021 (Exhibit 6) and the litigation in the Southern District ended. The terms of the May 23, 2021 settlement agreement are basically the same terms negotiated with Mr. Stastney on April 9, 2019 (Exhibit 2) except we provided flexibility on the timing of delivery of the TVs and some of the payments which are similar to the changes Mr. Stastney requested on Stream's behalf in our July 8, 2019 meeting.

79) The May 23, 2021 settlement agreement with Stream carries a substantial value to both companies.

80) Stream now has a full license to use the Rembrandt-Holding technology, SeeCubic does not.

81) However, until SeeCubic has such a license, it can fully expect that Rembrandt-Holding will seek to fully enforce its rights in the various forums seeking injunctions and to have their products held at the border. Mr. Stastney clearly knows SeeCubic, and/or its customers and vendors, need a license from Rembrandt-Holding to actually make and sell products but has failed to disclose that to date or to make any attempt to obtain the needed license from Rembrandt-Holding.

82) The assets SeeCubic is hoping to take are actually highly compromised in SeeCubic's hands because SeeCubic lacks the license from Rembrandt-Holding. To my knowledge, SeeCubic is not actually making anything yet, but it appears that SeeCubic is attempting to transfer source code and servers that include Rembrandt-Holding technology.

83) Clearly, one does not need a license to do nothing (assuming that they are not copying any of technology from Stream's servers). If SeeCubic does not take possession of anything that includes a Rembrandt-Holding technology, Rembrandt-Holding is not

affected by the Omnibus Agreement.

84) Rembrandt-Holding is not a party to the Omnibus Agreement and the Chancery court does not have subject matter jurisdiction to evaluate patent infringement, copyright infringement or other matters that are exclusively the jurisdiction of federal courts. It seems likely that the Chancery court had no knowledge of Rembrandt-Holding's rights in the technology when issuing the preliminary injunction, but even if the Chancery court did know of Rembrandt-Holding's rights, it had no authority to transfer Rembrandt-Holding's technology to SeeCubic.

85) Put simply, SeeCubic has either misappropriated or is about to misappropriate Rembrandt-Holding's rights and if SeeCubic ever successfully made, used, sold, offered for sale, imported or exported a TV covered by a Rembrandt-Holding patent, it will be sued for patent infringement along with any individuals that knowingly committed such acts of misappropriation and/or infringement.

86) Certainly Dr. Barenbrug and Mr. Stastney are both well aware of the Rembrandt-Holding rights and I expect that other individuals will have knowledge of the misappropriation that will be discovered after further investigation.

87) I have no idea what Mr. Stastney could possibly argue to avoid a willful infringement claim, given that while CFO for Stream he felt the Rembrandt-Holding claim was worth millions, but now in the hands of SeeCubic using the exact same technology he somehow believes SeeCubic does not require a license.

88) Either Mr. Stastney knowingly committed Stream to millions of dollars of payments for worthless claims by Rembrandt-Holding or he is flagrantly intending to infringe the rights he reasonably valued on April 9, 2019 now that he is managing SeeCubic.

89) SeeCubic is not entitled to an assignment of the settlement and license between

Rembrandt-Holding and Stream because there is an express prohibition of such an assignment. In fact, Stream's counsel wrote in a change of control provision to the April 9, 2019 term sheet that accelerates all cash payments if Stream goes through a change of controlling ownership (except in the event of an IPO).

90) If SeeCubic believes that it acquired all rights to Rembrandt-Holding technology under the settlement agreement, it needed to cut Rembrandt-Holding a check for $5,840,000 immediately. SeeCubic has not paid or offered to pay Rembrandt-Holding any money.

91) Mr. Stastney agreed that the list of IP rights was valid and appropriate to include in the April 9, 2019 term sheet that was prepared by DLA Piper attorneys and modifications were written in DLA Piper attorney's hand writing. The document was initialed by all parties and by Magistrate Parker.

92) Assuming that Mr. Stastney is not taking a different position today than he did before all of us in the room on April 9, 2019, including Magistrate Parker, SeeCubic should not object to removing all functionality covered by the Rembrandt-Holding technology since he is unwilling to have SeeCubic take a license.

93) The bankruptcy court does not need to reevaluate the merits of the Omnibus Agreement, for the current Stream bankruptcy, it merely needs to make sure that Stream does not transfer access to any of the Rembrandt-Holding technology that Stream did not have the right to transfer to SeeCubic.

94) If SeeCubic found keys in the Stream offices with a large "Hertz" tag on the key chain and found that the keys worked for a car in a nearby parking lot, it would be completely unreasonable to conclude that the Omnibus Agreement somehow gave SeeCubic title to a car belonging to Hertz.

95) Similarly, the Rembrandt-Holding technology is not an asset of Stream and it certainly cannot be transferred to SeeCubic.

96) While it would be easiest to leave all software and technology with Stream, it would be possible to have someone remove all of the Rembrandt-Holding know-how and trade secrets from the software to be transferred from Stream to SeeCubic.

97) As long as the software and technology transferred removed all functionality that included the enumerated intellectual property rights, SeeCubic could take possession of the remaining technology and property of Stream under the Omnibus Agreement.

98) The rights of Rembrandt-Holding can be protected in the current bankruptcy to prevent further misappropriation of Rembrandt-Holding technology by preventing Stream from breaching its settlement agreement by allowing SeeCubic to gain access to the technology of Rembrandt-Holding.

99) Stream was capable of working with vendors to build an excellent TV in the past and even if 100% of all assets of Stream are transferred to SeeCubic, the team of people at Stream are likely capable of working with the same or similar vendors to build a high quality 3D TV. While Ultra-D is nice, Rembrandt-Holding owns the technology that was developed many years before Ultra-D. Rembrandt-Delaware is a world leader in glasses free 3D displays and has never used Ultra-D in its products.

100) By working with Rembrandt-Holding's technology, Stream is a viable business entity even without any of the assets SeeCubic purports to now own, whereas, SeeCubic is not a viable business without a license to Rembrandt-Holding's technology.

101) Any reasonable and informed valuation of Stream (after executing the settlement agreement (Exhibit 6) with Rembrandt-Holding) is far in excess of all

claims of secured and unsecured creditors and this determination importantly flows from the information provided to me directly by Shad Stastney while he was CFO of Stream and the April 9, 2019 term sheet he negotiated (Exhibit 2).

102) The best way to protect all parties is to proceed with the bankruptcy process to ensure that an optimal result is achieved for all the secured and unsecured creditors.

Pursuant to 28 U.S.C. section 1746, I declare under penalty of perjury of the laws of the United States of America that the foregoing is true and correct.

Dated: ***June 8, 2021***

/s/ Christopher Michaels
____
Christopher Michaels
Patent attorney for Rembrandt 3D Holding Ltd.

Exhibit List (To Be Filed Separately):

Exhibit 1	First Amended Complaint and exhibits
Exhibit 2	April 9, 2019 Term Sheet initialed by Shad Stastney
Exhibit 3	Mr. Michaels email to Stream's bankruptcy counsel on April 20, 2021
Exhibit 4	Mr. Michaels email to the counsel for creditors of Stream on April 20, 2021
Exhibit 5	Mr. Michaels email to the counsel for SeeCubic on April 20, 2021
Exhibit 6	Settlement agreement between Stream and Rembrandt-Holding on May 23, 2021
Exhibit 7	Philips license to 3D Fusion.

EFiled: Oct 21 2022 02:41PM EDT
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Case No. 2020-0766-JTL

EXHIBIT 9

IN THE UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF DELAWARE

In re:	Chapter 7
Stream TV Networks, Inc.	Case No. 21-10848 (KBO)
	Related to D.I. 22
Alleged Debtor	

DECLARATION OF STEPHEN BLUMENTHAL
IN SUPPORT OF THE OBJECTION OF THE PETITIONING CREDITORS
TO THE EMERGENCY MOTION TO DISMISS

1) My name is Stephen Blumenthal. I am the managing member of Rembrandt 3D Holding Ltd. ("Rembrandt - Holding") a Nevis corporation. I am also the President and CEO of Rembrandt 3D Corp. ("Rembrandt – Delaware") a Delaware corporation.

2) The following facts are within my personal knowledge, except as noted, and are true and correct. I file this Declaration under 28 U.S.C. § 1746.

3) I was a co-founder of 3DFusion Corp. ("3DFusion"), the original owner of the improved Philip's 3DASD technology (or glasses-free 3D autostereoscopic display technology).

4) Philips offered a Glasses-Free three-dimensional (3D) autostereoscopic display ("3DASD") solution known as the WOWvx Platform for converting and generating 3D content from two-dimensional (2D) media content for rendering on Philips's 3DASD monitors. The WOWvx Platform uses mathematical algorithms to add depth and stereoscopic information to 2D content (i.e., 2D+Depth) thereby creating 3DASD content.

5) However, Philips's 3DASD solution suffered from significant image quality issues

because the 3DASD content generated by the WOWvx Platform contained numerous artifacts such as ghosting and required weeks of manual post-processing to correct. Nonetheless, 3DFusion licensed the WOWvx Platform from Philips.

6) Through extensive experimentation and research comprising more than 3000 hours of 2D-to-3D-depth-map rotoscoping, I developed a novel and non-obvious methodology to correct the image quality issues or artifacts in the 3DASD content generated by the Philips's WOWvx Platform.

7) In August of 2009, Philips notified 3DFusion that it was in the process of winding down its incubator 3DSolutions because it was unable to solve the aforementioned 3D image artifacts. However 3DFusion could continue to use the previously licensed hardware and software under its arrangement with 3DSolutions because Philips recognized that 3DFusion, though a 2-man company, could through its proprietary technology, ~~could~~ continue to advance Philips's products and tools including the WOWvx platform.

8) In or about September 2009, upon the shutdown of 3DSolutions, which manufactured the 3DASD monitors and developer of the supporting software (e.g. the WOWvx platform), I acting on behalf of 3DFusion, immediately contacted the former 3DSolutions' key technology experts (the "Team") to join 3DFusion as part of an effort to re-establish support for the WOWvx platform that had been provided by the now defunct 3DSolutions, and to engage the Team in Eindhoven, Netherlands, through a wholly owned Dutch subsidiary of 3DFusion. The Team included Walther Roelen ("Roelen") a former 3DSolutions 3DTV lens designer and Bart Barenbrug ("Barenbrug") a former 3DSolutions senior software engineer, both of whom are Dutch residents.

9) For convenience sake, the Dutch subsidiary was named "C3D" prior to its corporate formation. The name "C3D" was later changed to "3DFusion EU" as indicated in an email dated March 15, 2010 from Walther Roelen.

10) In December 2009, I went to Eindhoven, Netherlands to negotiate a license with Philips to manufacture the Philips WOWvx platform and to use their 800+ patents, which cost Philips close to half a billion dollars in R&D and to upgrade the Philips products and tools. 3DFusion signed the Philips Technology License in April of 2010 At that time, I also demonstrated 3DFusion's proprietary technology to the Team including Roelen and Barenbrug, all of whom orally agreed to keep 3DFusion's proprietary technology confidential. After the demonstration, one of the members of the Team, Ms. Grazina Seskeciuite, stated that "it took two guys from New York to come to Philips to show us how to fix our TV." My solution took two of the Philips tools which they considered 'constants' and I discovered that they could be used 'dynamically' to adjust and 'dial in the 3d image." Once the former 3DSolutions technical experts, (my Team) saw what their 3DTV could do, what it should look like with my solution, they immediately realized my solution was the first time anyone had seen the WOWvx 2D+Depth 3D image quality achieve a Broadcast Quality industry standard. Consequently, the senior 3DSolutions engineers went to Philips Intellectual Property and Standards Division and convinced them to provide a license to me.

11) Later in this same month, 3DFusion engaged the Team, including Roelen and Barenbrug as independent contractors to support 3DFusion's efforts to restart manufacturing of Philips's 3DASD monitors and the WOWvx platform.

12) In January 2010, I commenced bi-weekly teleconferences with the Team for starting

up the new Dutch subsidiary, with meeting minutes (the "Minutes") recorded by Ms. Ann-Marie van Ham, a member of the Team. The meeting minutes show the various technical and administrative issues addressed by the Team including licensing issues with Philips and my proposed 3D switchable lens design for joint development with Corning Glass, all of which are deemed confidential and proprietary information of 3DFusion. See, e.g., Minutes of February 17, 2010.

13) Having secured Philips's intellectual property and key technology experts, 3DFusion proceeded to seek funding and/or financing for its expanded operations and liabilities required by the new business model.

14) In June of 2010, Raja and Mathu Rajan, as officers of Stream TV were introduced (hereinafter collectively "the Rajans") to 3DFusion as potential investors.

15) On June 9 of 2010, Raja Rajan and Mathu Rajan, principals of Stream TV Networks, Inc., came to 3DFusion's offices at 110 Wall Street, New York, NY to view a demonstration of 3DFusion's 3DASD technology. Raja Rajan was the general counsel and COO of Stream and his brother, Mathu Rajan, a technologist and the CEO of Stream.

16) At the initial June 9, 2010 meeting, the Rajans stated that they had purchased a 42" Philips 3DASD TV platform and experienced the same 3D image quality failure as noted above. Upon viewing the 3DFusion's improved 3DASD tools and content on the same 42" model of the Philips WOWvx platform that they owned, they became immediately convinced of the significance of the 3DFusion solution to the Philips 3DASD problem.

17) At this time, Stream, with no 3DASD technology of their own, was trying (as yet unsuccessfully) to develop a marketable glasses free 3D product. They realized that

3D Fusion's technology would make that possible.

18) They indicated that the 3DFusion technology solved what was previously believed to be an unsolvable problem, and that this development would therefore provide them with a commercially viable 3D television product.

19) Based on this demonstration, the Rajans immediately signed a Mutual Non-Disclosure and Confidentiality Agreement on June 9, 2010, and began equity funding negotiations, with the promise to provide $20 million in funding.

20) 3DFusion provided Stream with information regarding all of the Confidential Information that had been developed by me and the Team, including both the pathway to automation of the 3D content generation process, and the 3D playback optimization and correction process that had, prior to my ground breaking work, been impossible to solve.

21) Over the ensuing months, I worked with the Rajans, Roelen, and Barenbrug and the Team. Under my leadership and supervision, we all worked collaboratively towards the goal of pursuing glasses free 3D television technology.

22) In September I officially hired Roelen as the General Director (CEO) of the 3DFusion EU. BV., the Dutch subsidiary, and paid him a Salary, with back pay to July 2010. Once the Dutch BV was established, employment contracts were initiated.

23) 3DFusion established and funded bank accounts for its Dutch subsidiaries 3DFusion Holding B.V. and 3DFusion EU B.V. W. Roelen withdrew certain funds from both of these bank accounts ostensibly for salary payments for the Team from about June 2010 through February 2011 including the period prior to his appointment as Director at 3D Fusion EU B.V in September 2010, even though Roelen was not an officer of 3DFusion Holding B.V. Barenbrug attended various trade shows on behalf of 3D

Fusion EU B.V. which paid for his trade shows related expenses and his equipment.

24) In October 2010, under Roelen's directions, 3DFusion EU hired its first full time employee, Ms. Grazina Seskeciuite, who was a graphic arts engineer and software developer, who had worked closely with Barenbrug at the former 3DSolutions, Roelen as the General Director with overall managerial responsibilities of the company, handled all confidential documents, had approved the Team's employment contracts template and was the Senior team organizer to whom the team looked to for guidance.

25) After 4 months of negotiating with the Rajans, on September 28th we signed our completed Term Sheet for their partnering investment, and I proceeded to provide them with full Due Diligence disclosures.

26) On October 8, 2010, I visited Stream's office in Philadelphia, Pennsylvania during which meeting I answered questions from Raja Rajan and Mathu Rajan and other employees of Stream (including Mr. Suby Joseph, the CFO of Stream) about 3DFusion's business plans and startup strategy and demonstrated 3DFusion's proprietary technology using 3DFusion's equipment loaded with 3DFusion's proprietary software and educated them on my solution. I went through all aspects of the workflow, of conversion, of optimization and correction of the artifacts in the 3DASD video content. I also explained how the lens design for the 3DASD monitors was critical to matching the content to, and went over the 2d switchable technology. This meeting lasted about 9 hours and Stream videotaped the entire 8-hour work session.

27) On October 27, 2010, at a 3D Technology conference (i.e., the Kagan 3D Technology Conference) at Waldorf Astoria hotel in New York City, I was seated on the same

panel as Mr. Jeffrey Katzenberg of DreamWorks, Mr. John Landau of Lucas Films, and other video pioneers discussing 3DASD technology. After the conference I invited them to our Waldorf suite for a full demonstration of the 3DFusion technology. The Waldorf conference and my 3DFusion, "Perfect Picture" broadcast quality 3DASD presentations resulted in our scheduling 3DASD demonstrations for Sony, Dreamworks, Intel, Technicolor, Sony, Pixar, Variety magazine and other west coast media companies, for the coming months.

28) On or about January 5, 2011, 3DFusion received a "Termination Agreement" dated January 5, 2011 and signed by Mathu Rajan on behalf of Stream and in his individual capacity, and Raja Rajan in his individual capacity contending that the Term Sheet is binding and that 3DFusion breached a clause in the Term Sheet.

29) 3DFusion subsequently learned that Director Roelen was acting to the detriment of 3DFusion EU and 3DFusion, in violation of his fiduciary and contractual duties to his employer 3DFusion and his confidentiality obligations under his NDA. Roelen understood that the information provided to him, or that was developed as derivative works of Philips's license technology, were all protected intellectual property and information of 3DFusion.

30) Upon information and belief, Roelen accepted an employment offer directly from Stream soon after the expiration of his NDA with 3DFusion, i.e., in or about January 2011.

31) Roelen continued to access and withdraw funds from 3DFusion Holding B.V. and 3DFusion EU B.V. until 3DFusion terminated his position of Director at 3DFusion EU B.V. in or about May 2011.

32) In or about January 2012, to his dismay, I learned for the first time that Stream,

Rajans, Roelen, and Barenburg had benefited from their violation of their NDAs and breach of their fiduciary responsibilities and contractual obligations to 3DFusion. While attending the Consumer Electronics Show ("CES") at Las Vegas, Nevada in January 2012, I observed W. Roelen working at Stream's exhibit booth and representing himself as an employee of Stream, along with other former members of the 3DFusion EU technical team. The technology exhibited by Stream, Rajans, and W. Roelen at the CES show belonged to 3DFusion.

33) I also learned in or about 2017 that Roelen and Barenbrug filed a US patent application (Ser. No. 14/428,866) entitled "Depth Adjustment of an Image Overlay in a 3D Image" on March 17, 2015 claiming priority to a Dutch patent application (Ser. No. 2009616) with a filing date of Oct. 11, 2012, which applications disclose the Confidential Information in violation of their NDAs such as, for example, the border-blending and depth- smoothing functions or features described in at least paragraphs [0076], [0077], [0081], and [0082] of the 14/428,866 application.

34) U.S. patent application 14/428,866 is owned by Stream's wholly owned subsidiary Ultra-D Coöperatief U.A. in Einhoven, Netherlands and has since abandoned the patent application as part of the settlement agreement between Rembrandt-Holding and Stream.

35) 3DFusion Corp. could not withstand the blow to its finances from the loss of the Eindhoven team and theft of its technology and closed operations.

36) In 2016, I acquired all of the assets and interests including all causes of action of 3DFusion and its subsidiaries and in 2017, I assigned such interests and causes of action to Rembrandt 3D Holding, Ltd, which was the plaintiff in the action against the Rajans and Stream.

37) Rembrandt-Holding is the successor-in- interest to 3DFusion Corp.

38) Rembrandt-Holding filed a complaint in the New York State Supreme Court in January 2017 against Stream TV Network, Inc. ("Stream"), Raja Rajan, and Mathu Rajan among others (Stream, Raja Rajan, and Mathu Rajan, collectively referred to as the "Defendants").

39) Defendants removed the state action to federal court.

40) Rembrandt-Holding subsequently moved to amend its complaint (the First Amended Complaint (FAC)), which was unopposed by Defendants. Defendants were served with the FAC on June 23, 2017 which is attached as Exhibit 1 to this declaration.

41) During a hearing on May 11, 2018, the parties agreed to mediation by a magistrate judge. [Dkt# 56] Subsequently, Magistrate Judge Parker ordered the parties to attend a settlement conference in person with counsel on July 18, 2018 (the "First Mediation Conference"). [Dkt# 58] Raja Rajan attended the First Mediation Conference with Mr. Neal Kronley of DLA Piper (former counsel to Defendants) while I came as the sole director and officer of Rembrandt-Holding, and was represented by my counsel Chi Eng and Christopher Michaels.

42) At the First Mediation Conference, I demonstrated the 3DASD technology using the original 3DFusion equipment loaned to Stream in 2010. This identical equipment was featured in a news article dated January 25, 2011 published by The Flying Kite Media, a Philadelphia based online magazine (the "2011 News Article"), wherein Defendants showcased 3DFusion's laptop and video content. (Ex. 1, 2011 News Article entitled "how philly is leading the glasses-free 3d revolution").

43) I felt having published photographic evidence of Stream claiming credit for the technology on my computer, using my software, and my content that I had developed

was fairly compelling evidence, but as mediations progressed both me and the attorneys representing Rembrandt-Holding provided additional evidence and argument that everyone of Stream's current products and their intended products included intellectual property owned by Rembrandt-Holding.

44) I made specific mention of the fact that Roelen, Barenburg, and Stream's wholly owned subsidiary Ultra-D Coöperatief U.A. in Einhoven, Netherlands were attempting to patent my technology as their own in U.S. patent application 14/428,866. I provided specific examples of the portions of the patent application that were my inventions.

45) After the First Mediation Conference, Ultra-D Coöperatief U.A. abandoned U.S. patent application 14/428,866 that included my technology as part of our on-going settlement discussions. This effectively immediately resolved an extremely important issue to me and injected some degree of good will into a difficult situation.

46) During the mediation presided over by Judge Kathleen Parker, Stream also provided several of their 4K TVs for us to evaluate by sending them to our various locations across the country at no charge which also paved the way for further settlement discussions.

47) I was able to compare the Stream 4K TV to the old Philips 3D TVs and TVs made by other manufacturers. I was able to use my technology to correct image errors on the Philips 3D TVs and compare it to how the Stream 4K TV managed to correct the same content. I reviewed these comparisons with Christopher Michaels in his offices in Ithaca, NY.

48) For the following six months, the parties corresponded settlement terms via email and conducted several in-person settlement conferences at Stream offices in Philadelphia

with me, Christopher Michaels, and Neil Wallace representing the Rembrandt-Holding, and Raja Rajan representing the Defendants. The parties did not resolve their differences.

49) On January 11, 2019, Magistrate Judge Parker ordered the parties to attend a second settlement conference in person with counsel on April 9, 2019 (the "Second Mediation Conference"). [Dkt# 67]

50) At the Second Mediation Conference, Stream was represented by its Chief Financial Officer, Shad Stastney, and its counsel Neil Kronley and John Wellschlager.

51) During the Second Mediation Conference, the parties reached the terms of an agreement and a term sheet was prepared by Stream's counsel that was initialed by me, Stream CFO Shad Stastney, our respective attorneys, and Magistrate Parker and I have attached a copy of this term sheet initialed by Shad Stastney as Exhibit 2.

52) This term sheet provided for Stream to license Rembrandt-Holding's:

   a. "*Knowhow and trade secrets related to methodology for:*

      i. *efficiently converting, correcting and optimizing a 2D+Depth video for playback on a 3D autostereoscopic associated with the Philips technology*

      ii. *utilizing the Philips 2d Switchable Lens technology for refractive and detractive lens switching for the creation of the 'lightfield' and 3d content artefact correction.*

      iii. *utilizing the On Screen Display functions of Borders and "Liveliness."*

   b. *Trademarks*

   c. *the patents asserted in Rembrandt's First Amended Complaint, and dismissed by the Court on March 28, 2018 (ECF No. 47}"* (See Schedule A of the April

9, 2019 term sheet – Exhibit 2)

53) Every TV sold by Stream incorporated the enumerated know-how and trade secrets and but for the license, infringed the patents referenced in the term sheet, so this settlement was essential for Stream to continue selling product free of infringement allegations.

54) Stream agreed to pay Rembrandt-Holding $5,840,000 in cash, 2,000,000 warrants to purchase Stream stock, 100 4K TVs for no charge, 8 8K prototypes at no charge, and the right to purchase 3,015,000 8K 3DASD LCD units at cost.

55) At each mediation, I emphasized that I wanted my companies to be one of Stream's largest customers and that the most important aspect of the deal was the right to purchase products. Rembrandt-Delaware previously purchased a Stream TV for $5,250, so we estimated the value of the no charge TVs and the 8K prototypes to be about $567,000.

56) Based on Shad Stastney's statements, we estimated at Stream's margin was approximately $400/unit so the ability to purchase 3,015,000 units at cost was worth approximately $400/unit x 3,015,000 units = $1,206,000,000.

57) In other words, the total value of the settlement agreement between Stream and Rembrandt-Holding is far greater than all the secured and unsecured Stream creditors' claims combined.

58) As we were attempting to finalize the documents for settlement, we were contacted by counsel for Stream and asked to meet in person to make adjustments to the April 9, 2019 term sheet but promised that Stream intended to maintain the net present value of the April 9, 2019 terms.

59) We met with Shad Stastney, Mark Colemen (director of Stream), Neil Kronley, and

John Welschlager on July 8, 2019. I attended with counsel, Chi Eng, Christopher Michaels, and Neil Wallace.

60) During our meeting, Mr. Stastney explained that Stream's production was delayed and he requested flexibility on timing of payments and shipments of products. We asked a number of questions over the day, but Christopher Michaels asked Mr. Stastney a series of specific questions about the expected production costs, production capacity, and the expected margin. As Mr. Stastney answered, I saw Mr. Michaels type the answers into a computer and later reviewed the spreadsheet that Mr. Michaels was using to show a financial model that evaluated the various proposals for modifications to the April 9, 2019 term sheet so we could assess whether the new proposals matched the net present value of the April 9, 2019 term sheet.

61) Mr. Michaels specifically asked Mr. Stastney about the margins for Stream's products and Mr. Stastney told us that it would be about $400/unit during early commercial scale production and then drop to as low as $120/unit during very high volume production in later years.

62) While our settlement agreement provides a right to purchase products at cost, we specifically discussed with Stream's various representatives that increasing Stream's volume of production would allow Stream to lower its production costs across all products such that Stream could command higher margins from other customer sales.

63) We confirmed directly with Mr. Stastney that the value the ability to purchase units at cost was $400/unit at the beginning trending to $120/unit at high volumes such that the value to Rembrandt-Holding of the right to purchase at cost products was approximately $360,000,000 to $1,206,000,000.

64) At some point after our July 8, 2019 meeting, Stream's management and board of

directors went through turn over and Stream fired DLA Piper as its litigation counsel. It was very challenging to get anyone to respond to our requests to complete the settlement, so Rembrandt-Holding eventually filed a motion to enforce the April 9, 2019 term sheet.

65) The motion to enforce was still pending when I learned that Stream had filed for bankruptcy. I asked Chi Eng to attempt to contact litigation counsel for Stream regarding informing the district court about the bankruptcy and stay, but received no response, so Chi Eng notified the court of the pending bankruptcy and the automatic stay. The court extended the response time on the motion.

66) I asked Mr. Michaels to reach out to Stream's bankruptcy counsel (Exhibit 3), the counsel for creditors (Exhibit 4,) and the counsel for SeeCubic (Exhibit 5) on April 20, 2021 to make sure they all knew about our claim and to invite resolution. Only Stream's counsel responded to our communications.

67) Despite having communicated with all represented party's counsels in the Stream Chapter 11 prior bankruptcy proceeding, neither Rembrandt-Holding or I have ever been provided any notice of any motions in any proceeding in the bankruptcy court or Delaware Chancery court.

68) Rembrandt-Holding was not a party to the Omnibus Agreement, yet Shad Stastney, Eben Coffer, Stream, and the Rajans were all well aware of our allegations that all Stream technology infringed the rights held by Rembrandt-Holding. They all knew that Stream had no right to transfer any rights to Rembrandt-Holding technology to SeeCubic.

69) It appears that Shad Stastney decided not to disclose to either the Chancery Court or the Bankruptcy Court that he personally represented Stream in our settlement

negotiations and initialed the April 9, 2019 term sheet providing Rembrandt-Holding the settlement terms including over $6,400,000 in cash and free TVs, 2,000,000 warrants, plus the right to purchase new TVs at a collective discount worth over $1.2 billion.

70) After the bankruptcy case was dismissed, we were able to complete the settlement agreement between Stream and Rembrandt-Holding on May 23, 2021 (Exhibit 6) and the litigation in the Southern District ended. The terms of the May 23, 2021 settlement agreement are basically the same terms negotiated with Mr. Stastney on April 9, 2019 (Exhibit 2) except we provided flexibility on the timing of delivery of the TVs and some of the payments which are similar to the changes Mr. Stastney requested on Stream's behalf in our July 8, 2019 meeting.

71) The May 23, 2021 settlement agreement with Stream carries a substantial value to both companies.

72) Our agreement provided Stream a complete resolution of the litigation through a license to the technology and an expectation of large purchases from Rembrandt-Holding.

73) It is my belief that ~~through~~ my companies have a market for all the TVs that Stream is obligated to provide.

74) Rembrandt-Delaware has been purchasing 3D hardware from a variety of sources and selling equipment and installations without using any UltraD technology.

75) Rembrandt-Delaware has successfully been selling a number of 3DASD product and projects over the years, including bringing to market a 10" Android, no glasses 3D tablet, which received rave reviews from Huffington Post science writer Robert Elisberg (http://rembrandt3d.com/media-2/rembrandt-3d-10-auto-stereoscopic-no-

glasses-3d-android-tablet/) Rembrandt Delaware 3D tablet has been for sale on Amazon for a number of years, until our entire remaining inventory was purchased by one customer in 2020.

76) In 2015 we joined forces with Ken Love a renowned Frank Lloyd Wright videographer for the production of a 3DASD film on Wright's iconic house, "Fallingwater. This Rembrandt 3DASD presentation is on display at the Fallingwater site and at the Pittsburgh International Airport Frank Lloyd Wright exhibit. Our website shows our installation regarding the Frank Lloyd Wright Falling Water installation - http://rembrandt3d.com/the-opening-of-the-3d-no-glasses-frank-lloyd-wright-film-fallingwater-in-3d-at-the-pittsburgh-international-airport/.

77) To my knowledge, Rembrandt-Delaware is the only company selling Broadcast Quality, consumer glasses free products in the US and has the only glasses free 3D installations in museums, public forums and other world class locations, which have been operating seven days a week since 2010.

78) Rembrandt-Delaware has multiple vendor options for providing glasses free 3D hardware and is about to expand its product line up and management team. We would like Stream's 3D products to fit into that business.

79) Our current plans include a continuation of the museum installations. The ideal project included 3D installations at the museum, installations in travel venues (airports, train stations, etc.) and then travelling exhibits that the museum can use to market the museum at other museums. Rembrandt-Delaware works closely with the content creators and provides content creation, conversion, and optimization services. So an agreement with one museum can include a sale of 6-12 TVs and a large amount of bundled services running into a total of hundreds of thousands of dollars. The 3D

TVs are an essential part of that budget, but frankly a relatively small part compared to the budget for services and surrounding installations.

80) The main advantage to Rembrandt-Delaware of these installations is the ability to demonstrate the very high end of the market for 3D content and hardware that acts as an effective marketing tool for Rembrandt-Delaware.

81) Rembrandt-Delaware's primary market will be in-store advertising displays targeting chains, big box independents and department stores. A single store might want dozens of 3D displays and the retail store can provide advertising of its own products or ads sold to its vendors. This is already a common practice for 2D displays and a great deal of software, network management, and content services already exist.

82) However, to bring 3D into this market, the 3D display and 3D content must be exceptional and without any artifacts. My technology allows impressive 3D effects to make images appear with depth from the face of the screen back to the perspective vanishing point and outward from the face of the screen, "forward pop" extending 40% of the screens diagonal measurement. For advertising, it is possible to work with short 15-120 second clips to match the content to the capabilities of the 3D display.

83) I intend to target chain store retailers with overlapping products for cross pollination of 3D digital signage network advertising between them. I would pick them in five different categories. For example, a 3D ad for a video game could play in a variety of stores, e.g. Walmart-10,526 stores, Game Stop-4,816 stores, Best Buy-977. Each of these stores, could install a dozen or more TVs. 20,000+ stores targeted for network of dedicated product. Once a particular store that sells video games starts using 3D displays, the competitive retail chains will be under pressure to follow suit. Likewise,

once one video game is advertised with 3D video content, every other video game creator will be under pressure to compete with 3D advertising. Roughly 10,000 new video game titles are published each year. With each store or vendor paying for its own content creation, Rembrandt 3D is able to charge tens of thousands for a simple 2D to 3D ad conversion ~~or millions for novel 3D content creations~~ and can charge a percentage of the ad revenue for running the ads in the 3D display network. Just assuming video game retailers selling 6 3D displays per store over 20,000 locations, would mean 120,000 3D displays and the potential for 3D ads for thousands of new titles.

84) While using video games as an example, the same competitive logic exists for numerous products, e.g. jewelry, make-up, clothing, etc.

85) Such advertising networks are extremely common for 2D video content and given the number of venues like airports that are municipalities, we have downloaded the standard contracts used by Clear Channel and others for revenue sharing with the store. There are already ad brokers to sell ad time in just about any major mall or transportation venue in the US. While such networks are available for 2D video and print displays, they have yet to be created for 3D content ads and Rembrandt-Delaware intends to enter this market in force.

86) Statistica.com estimates that in 2020 digital out-of-home advertising spending in the United States was to amount to 2.72 billion U.S. dollars. It is projected to further grow to 3.84 billion dollars by the end of 2023. To date all of that revenue is for 2D technology rather than 3D and does not count the charges for content creation and other services.

87) Rembrandt-Delaware is expanding its management team to include John Endicott,

former Westfield Mall executive, as VP of Retail Sales He was Vice President of Design & Construction, Vice President of Development, Vice President of Partner Relations. His title in London was Executive Vice President of International Development. Mr. Endicott's prior position created relationships with a large number of retail store chains. Mr. Endicott created Westfield's tenant design criteria for new and remodeling of stores and for Westfield's temporary kiosk tenants and the concept for a permanent kiosk where tenants lease the kiosk and immediately commence trading so he is extremely familiar with the necessary construction issues and permits for both small and large 3D TV installations.

88) Rembrandt-Delaware also plans to provide "3D IN A BOX" as turn-key 3D platform that is shipped in an automatic lift, display ATA travel Case on wheels, with remote control operation of the lift mechanism which elevates the 3D display. The package would include a 7-day ship and return, freight paid by buyer, plus a custom quote for content. Effectively, this would a short term lease of the unit and we would retain ownership of the units. We plan to keep permanent housing of the units near typical convention venues to allow companies to use the hardware at their trade shows. If the customers use them frequently enough, we would also offer the units for sale, but the 3D display would be one aspect of the total hardware sold to the customer.

89) Rembrandt-Delaware has a number of other product concepts in the works, but they are less relevant to a specific purchase of 3D displays from Stream.

90) Rembrandt-Delaware can enter these markets with or without Stream or the UltraD technology, but the Rembrandt-Holding and Stream settlement agreement provides a strong incentive to work with Stream products.

91) To be clear, 100% of the products by Stream and all UltraD technology includes my

know-how, trade secrets, and would infringe the patents assigned to Rembrandt-Holding. All of this technology was licensed to Stream in the settlement agreement, but Stream did not have the right to assign this license or to sub-license others (other to have products made).

92) This is common in the industry and mimics the license that 3D Fusion had with Philips that I have attached as Exhibit 7 (note the confidentiality period has expired) note section 2.1:

"Philips has the right of termination thereof under Section 5.2, below, Philips hereby grants to 3D Fusion and its Affiliates, during the term of this Agreement, a worldwide non-exclusive, ***non-transferable license, without the right to grant sub-licenses****, under the Licensed Patents and the Licensed Know-How to: (a) use, sell, offer to sell, import, export, and otherwise dispose of the Licensed Products, and (b) lease, operate or otherwise make available to customers thereof, the Licensed Products, including the right to utilize any Licensed Products to provide services relating to 3D Content Services to any third party."* (emphasis added)

93) Rembrandt-Holding provided Stream a non-exclusive license to the technology that is embedded in the UltraD technology. Stream had and has no power to sublicense others. More specifically, Stream does not have the power to transfer its license or to sublicense SeeCubic.

94) Transferring rights to UltraD and/or Stream's Eindhoven corporations to SeeCubic does not transfer any rights to the technology of Rembrandt-Holding.

95) Further, if those entities or individuals transferred any of the know-how, trade secrets, or technology covered by the patents owed by Rembrandt-Holding, it would violate both the settlement agreement with Rembrandt-Holding.

96) Despite the dispute between the parties, Rembrandt-Delaware had purchased a 4K UltraD TV from Stream in the past. During settlement negotiations, Stream provided several 4K TVs that included the UltraD technology. Reviewing the UltraD technology allowed me to assess whether it included the technology I developed through 3D Fusion (later transferred to Rembrandt-Holding). I found that the Rembrandt-Holding technology was embedded in every Stream TV. However, I was also able to compare the Stream product to other glasses 3D TVs made by other companies with Philips 3DASD units utilizing my technology, and identify image optimizations in the Stream Ultra-d monitor which utilized my patented methodology

97) I see from SeeCubic's website that Bart Barenbrug is now associated with SeeCubic. After Dr. Barenbrug ceasing to work with 3D Fusion and then going to Stream and filing a patent application seeking to protect my technology, it is upsetting to see that he is now working with yet another new company once again seeking to sell products using my technology without compensation.

98) While Ultra-D Coöperatief U.A. did abandon U.S. patent application 14/428,866 that included my technology as part of our on-going settlement discussions, that one act does nothing to address the rest of the technology that was eventually licensed to Stream.

99) Neither Ultra-D Coöperatief U.A. or SeeCubic has a license to my technology. While the CFO of Stream, Mr. Stastney was willing to have Stream pay many millions in value to obtain a license, he has not offered a single cent for a license from SeeCubic. It was my genuine impression that Mr. Stastney believed that the agreement we reached on April 9, 2019 was a fair valuation of my technology and we reached reasonable settlement terms. If he believed it was fair then, I can think of no excuse

that would justify a belief that SeeCubic should not pay a similar amount for a license to the exact same technology to make the exact same product.

100) I do not see anything that SeeCubic has filed in any of the legal proceedings that lists Rembrandt-Holding as a party that it intends to compensate despite its often stated intention to fully deploy Ultra-D technology.

101) The Stream TV with UltraD is an impressive product and quite frankly out performs any other currently available 3DASD options in a number of contexts. However, a large part of what makes it so impressive is that it includes much of technology that I have assigned to Rembrandt-Holding. Rembrandt-Delaware would use the Stream TV for a number of our projects. However, it is important to understand that as impressive as the Ultra-D technology is, it is not the only option on the market and I can and have deployed my technology in other products. Therefore, the settlement agreement also provides Stream with a major competitive advantage by strongly encouraging Rembrandt-Holding and Rembrandt-Delaware to purchase products from Stream rather than using other manufacturers. This increased volume lowers Stream's overall production costs, but also in turn makes it more difficult for competitors to Stream to achieve efficient production volume.

102) While it is my expectation that Rembrandt-Delaware and Rembrandt-Holding will be large customers of Stream, I would expect that the Stream would have many other customers such that the $1.2 billion in profit margins saved by Rembrandt-Nevis would be matched by many billions in profits from sales by Stream to other major customers, whom they have been grooming for years.

103) SeeCubic cannot sell any products without walking into the exact same litigation that Shad Stastney agreed should be settled for many millions of dollars and

there is not much incentive for Rembrandt-Holding to grant any license.

104) Before agreeing to settle with Stream, I and others on my team, carefully evaluated the products Stream built. To my knowledge, SeeCubic has not made any products.

105) My personal interest, and the interests of Rembrandt-Holding and Rembrandt-Delaware lie in having access to reliable glasses free 3D hardware. I am personally largely indifferent to the company that makes that technology so long as the product is high quality, meets the customer's needs, and has licensed my technology fairly. Though I was certainly concerned about how my technology was used inappropriately, my focus is on bringing 3D TVs to market. ~~not on seeking any form of revenge.~~

106) I have been in litigation with the Rajans and Stream for many years, yet the resolution contemplated all the way back to the beginning of mediation (and eventually reached with Shad Stastney on April 9, 2019) was for us to resolve the litigation and work together to bring 3D technology to the marketplace.

107) Stream now has a full license to use the Rembrandt-Holding technology, SeeCubic does not. After years of litigation, I am happy to be working with Stream to bring TVs to market.

108) I would be happy to work with SeeCubic if it was able to show that it had a viable plan to manufacture a working 3D TV, given that the Philips License is only for production and sales, not sub-licensing, it is not clear how SeeCubic will actually have a viable business model without manufacturing its own products. It is my understanding that they intend to license others to use their technology, but any licensee would need an independent license from Philips and Rembrandt-Holding. I

do not see how they can possibly submit a credible plan for compensating creditors and investors without a license from Rembrandt-Holding yet they have taken no action to obtain a license. However, until SeeCubic has such a license, it can fully expect that Rembrandt-Holding will seek to fully enforce its rights in the various forums seeking injunctions and to have their products held at the border.

109) Mr. Stastney clearly knows SeeCubic, and/or its customers and vendors, need a license from Rembrandt-Holding to actually make and sell products but has failed to disclose that to date or to make any attempt to obtain the needed license from Rembrandt-Holding.

110) Frankly, the assets SeeCubic is hoping to take are actually highly compromised in SeeCubic's hands because SeeCubic lacks the license from Rembrandt-Holding. To my knowledge, SeeCubic is not actually making anything yet, but it appears that SeeCubic is attempting to transfer source code and servers that include Rembrandt-Holding technology.

111) It would be possible to have someone remove all of the Rembrandt-Holding know-how and trade secrets from the software to be transferred from Stream to SeeCubic. As long as the software and technology transferred removed all functionality that included the enumerated intellectual property rights.

112) It is important to note that Mr. Stastney agreed that the list of IP rights was valid and appropriate to include in the April 9, 2019 term sheet (Exhibit 2) that was prepared by DLA Piper attorneys and modifications were written in DLA Piper attorney's hand writing. The document was initialed by all parties and by Magistrate Parker.

113) Assuming that Mr. Stastney is not taking a different position today than he did

on April 9, 2019 before all of us in the room, including Magistrate Parker, SeeCubic should not object to removing all functionality covered by the Rembrandt-Holding technology since he is unwilling to have SeeCubic take a license.

114) The Rembrandt-Holding technology is not an asset of Stream and it certainly cannot be transferred to SeeCubic without SeeCubic first obtaining a license from Rembrandt-Nevis.

115) The primary objective of Rembrandt-Holding in the current bankruptcy is to prevent further misappropriation of our technology by allowing SeeCubic to gain access to the technology of Rembrandt-Holding without a proper license.

116) Further, Rembrandt-Holding would obviously like to collect the amounts that it is owed under that license to Stream.

117) Lastly, Stream was capable of working with vendors to build an excellent TV in the past and even if 100% of all assets of Stream are transferred to SeeCubic, the team of people at Stream are likely capable of working with the same or similar vendors to build a high quality 3D TV. While Ultra-D is nice, Rembrandt-Holding owns the technology that was developed many years before Ultra-D and is frankly all Rembrandt-Delaware has used in the marketplace for years and our 3D displays literally are museum quality.

118) In sum, Stream is a viable business entity and useful to both of my companies even without any of the assets SeeCubic purports to now own.

Pursuant to 28 U.S.C. section 1746, I declare under penalty of perjury of the laws of the United States of America that the foregoing is true and correct.

Dated: ***June 8, 2021***

/s/ Stephen Blumenthal

Stephen Blumenthal
Manager – Rembrandt 3D Holding Ltd.

Exhibit List (To Be Filed Separately):

Exhibit 1	First Amended Complaint and exhibits
Exhibit 2	April 9, 2019 Term Sheet initialed by Shad Stastney
Exhibit 3	Mr. Michaels email to Stream's bankruptcy counsel on April 20, 2021
Exhibit 4	Mr. Michaels email to the counsel for creditors of Stream on April 20, 2021
Exhibit 5	Mr. Michaels email to the counsel for SeeCubic on April 20, 2021
Exhibit 6	Settlement agreement between Stream and Rembrandt-Holding on May 23, 2021
Exhibit 7	Philips license to 3D Fusion.

EXHIBIT 10

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
1	Email - October 4, 2010 at 5:47:51 AM EDT From: Walther Roelen CEO, 3DFusion EU B.V. To: ilya.sorokin@actforex.com, "'Steve.Blumenthal'" <steve.blumenthal@3dfusion.com>
2	Email - October 4, 2010 at 5:47:51 AM EDT From: Walther Roelen CEO, 3DFusion EU B.V. To: ilya.sorokin@actforex.com, "'Steve.Blumenthal'" <steve.blumenthal@3dfusion.com>
3	Email - October 4, 2010 at 5:47:51 AM EDT From: Walther Roelen CEO, 3DFusion EU B.V. To: ilya.sorokin@actforex.com, "'Steve.Blumenthal'" <steve.blumenthal@3dfusion.com>
4	Email - October 4, 2010 at 5:47:51 AM EDT From: Walther Roelen CEO, 3DFusion EU B.V. To: ilya.sorokin@actforex.com, "'Steve.Blumenthal'" <steve.blumenthal@3dfusion.com>
5	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: aquarium Date: February 1, 2010 at 3:39:48 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com
6	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Fwd: Intel Sandy Bridge Date: November 15, 2010 at 2:49:42 PM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: Walther Roelen <walther@c3d-vr.com>, Stephen Blumenthal <steve.blumenthal@3dfusionusa.com>, alex@3dfusion.com Reply-To: bart@c3d-vr.com
7	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Fwd: Intel Sandy Bridge Date: November 15, 2010 at 2:49:42 PM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: Walther Roelen <walther@c3d-vr.com>, Stephen Blumenthal <steve.blumenthal@3dfusionusa.com>, alex@3dfusion.com Reply-To: bart@c3d-vr.com
8	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Fwd: Intel Sandy Bridge Date: November 15, 2010 at 2:49:42 PM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: Walther Roelen <walther@c3d-vr.com>, Stephen Blumenthal <steve.blumenthal@3dfusionusa.com>, alex@3dfusion.com Reply-To: bart@c3d-vr.com
9	From: "Bart Barenbrug" <bart@c3d-vr.com> Sent: Thursday, September 30, 2010 9:25 PM To: <steve.blumenthal@3DFusionUSA.com> Cc: "Walther Roelen" <walther_roelen@hotmail.com>; "Ilya Sorokin" <sorokin.ilya@gmail.com>; "Hans Zuidema" <HansZuidema@upcmail.nl>

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
10	From: "Bart Barenbrug" <bart@c3d-vr.com> Sent: Thursday, September 30, 2010 9:25 PM To: <steve.blumenthal@3DFusionUSA.com> Cc: "Walther Roelen" <walther_roelen@hotmail.com>; "Ilya Sorokin" <sorokin.ilya@gmail.com>; "Hans Zuidema" <HansZuidema@upcmail.nl>
11	From: "Bart Barenbrug" <bart@c3d-vr.com> Sent: Thursday, September 30, 2010 9:25 PM To: <steve.blumenthal@3DFusionUSA.com> Cc: "Walther Roelen" <walther_roelen@hotmail.com>; "Ilya Sorokin" <sorokin.ilya@gmail.com>; "Hans Zuidema" <HansZuidema@upcmail.nl>
12	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Gold (formerly Red) Box status Date: September 16, 2010 at 5:03:14 PM EDT To: Steve Blumenthal <steve.blumenthal@3dfusionusa.com> Cc: Walther Roelen <walther@c3d-vr.com>, Ilya Sorokin <is@3dfusionusa.com> Reply-To: bart@c3d-vr.com
13	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Content conversion proposal Date: September 16, 2010 at 1:46:56 PM EDT To: is@3dfusionusa.com Cc: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, "Roelen, Walther" <walther@c3d-vr.com>, Grazzy <grazinaseskeviciute@gmail.com> Reply-To: bart@c3d-vr.com
14	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Content conversion proposal Date: September 16, 2010 at 1:46:56 PM EDT To: is@3dfusionusa.com Cc: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, "Roelen, Walther" <walther@c3d-vr.com>, Grazzy <grazinaseskeviciute@gmail.com> Reply-To: bart@c3d-vr.com
15	Subject: Re: MTV Date: August 29, 2010 at 10:06:22 AM EDT To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute <grazinaseskeviciute@gmail.com>, Ilya Sorokin <sorokin.ilya@gmail.com>, Stephen Blumenthal <stephen3d@mac.com>, Walther Roelen <walther@c3d-vr.com> Reply-To: bart@c3d-vr.com

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
16	Subject: Re: MTV Date: August 29, 2010 at 10:06:22 AM EDT To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute <grazinaseskeviciute@gmail.com>, Ilya Sorokin <sorokin.ilya@gmail.com>, Stephen Blumenthal <stephen3d@mac.com>, Walther Roelen <walther@c3d-vr.com> Reply-To: bart@c3d-vr.com
17	Subject: Re: MTV Date: August 29, 2010 at 10:06:22 AM EDT To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute <grazinaseskeviciute@gmail.com>, Ilya Sorokin <sorokin.ilya@gmail.com>, Stephen Blumenthal <stephen3d@mac.com>, Walther Roelen <walther@c3d-vr.com> Reply-To: bart@c3d-vr.com
18	Subject: Re: MTV Date: August 29, 2010 at 10:06:22 AM EDT To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute <grazinaseskeviciute@gmail.com>, Ilya Sorokin <sorokin.ilya@gmail.com>, Stephen Blumenthal <stephen3d@mac.com>, Walther Roelen <walther@c3d-vr.com> Reply-To: bart@c3d-vr.com
19	Subject: Re: MTV Date: August 29, 2010 at 10:06:22 AM EDT To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute <grazinaseskeviciute@gmail.com>, Ilya Sorokin <sorokin.ilya@gmail.com>, Stephen Blumenthal <stephen3d@mac.com>, Walther Roelen <walther@c3d-vr.com> Reply-To: bart@c3d-vr.com
20	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Hey Again, Sb Date: August 8, 2010 at 6:12:38 PM EDT To: steve.blumenthal@3dfusionusa.com Cc: Walther Roelen <walther@c3d-vr.com
21	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Hey Again, Sb Date: August 8, 2010 at 6:12:38 PM EDT To: steve.blumenthal@3dfusionusa.com Cc: Walther Roelen <walther@c3d-vr.com
22	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3D Conversion Date: June 15, 2010 at 5:21:48 PM EDT To: Stephen Blumenthal <stephen3d@mac.com> Cc: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, , Walther Roelen <walther@c3d-vr.com>, Grazzy Seskeviciute <grazinaseskeviciute@gmail.com> Reply-To: bart@c3d-vr.com

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
23	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3D Conversion Date: June 15, 2010 at 5:21:48 PM EDT To: Stephen Blumenthal <stephen3d@mac.com> Cc: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, , Walther Roelen <walther@c3d-vr.com>, Grazzy Seskeviciute <grazinaseskeviciute@gmail.com> Reply-To: bart@c3d-vr.com
24	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3D Conversion Date: June 15, 2010 at 5:21:48 PM EDT To: Stephen Blumenthal <stephen3d@mac.com> Cc: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, , Walther Roelen <walther@c3d-vr.com>, Grazzy Seskeviciute <grazinaseskeviciute@gmail.com> Reply-To: bart@c3d-vr.com
25	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3D Conversion Date: June 15, 2010 at 5:21:48 PM EDT To: Stephen Blumenthal <stephen3d@mac.com> Cc: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, , Walther Roelen <walther@c3d-vr.com>, Grazzy Seskeviciute <grazinaseskeviciute@gmail.com> Reply-To: bart@c3d-vr.com
26	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3D Conversion Date: June 15, 2010 at 5:21:48 PM EDT To: Stephen Blumenthal <stephen3d@mac.com> Cc: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, , Walther Roelen <walther@c3d-vr.com>, Grazzy Seskeviciute <grazinaseskeviciute@gmail.com> Reply-To: bart@c3d-vr.com
27	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Red Box demo Date: May 17, 2010 at 12:51:15 PM EDT To: stephen blumenthal <stephen3d@mac.com> Cc: Ilya Sorokin <sorokin.ilya@gmail.com>, Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com>, Walther Roelen <walther@c3d-vr.com> Reply-To: bart@c3d-vr.com
28	From: bart@c3d-vr.com Subject: Re: Auto depth maps, ??? Date: May 15, 2010 at 9:15:26 AM EDT To: stephen blumenthal <stephen3d@mac.com>

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
29	From: bart@c3d-vr.com Subject: Re: Auto depth maps, ??? Date: May 10, 2010 at 11:14:33 PM EDT To: stephen blumenthal <stephen3d@mac.com> Cc: Ilya Sorokin <sorokin.ilya@gmail.com>, Grazzy Seskeviciute <grazinaseskeviciute@gmail.com>, walther@c3d-vr.com
30	From: Bart Barenbrug <bart@c3d-vr.com> Subject: 3ds media player & DCT vs wowvx player Date: April 27, 2010 at 5:39:28 PM EDT To: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, Stephen Blumenthal <stephen3d@mac.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Cc: Walther Roelen <walther@c3d-vr.com> Reply-To: bart@c3d-vr.com
31	From: Bart Barenbrug <bart@c3d-vr.com> Subject: 3ds media player & DCT vs wowvx player Date: April 27, 2010 at 5:39:28 PM EDT To: Steve Blumenthal <steve.blumenthal@3dfusionusa.com>, Stephen Blumenthal <stephen3d@mac.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Cc: Walther Roelen <walther@c3d-vr.com> Reply-To: bart@c3d-vr.com
32	From: "Hans Zuidema" HansZuidema@upcmail.nl Subject: Re: Fwd: 3DFusion Date: September 30, 2010 at 5:29;12 PM EDT To: "Bart Barenbrug" <bart@c3d-vr.com>, <steve.blumenthal@3DFusionUSA.com> -------AND------- From: "Hans Zuidema" HansZuidema@upcmail.nl Subject: Re: Fwd: 3DFusion Date: September 30, 2010 at 5:00:52 PM EDT To: "Bart Barenbrug" <bart@c3d-vr.com>, <steve.blumenthal@3DFusionUSA.com> Cc: "Walther Roelen" <walther_roelen@hotmail.com>, "Ilya Sorokin" <sorokin.ilya@gmail.com> Reply-To: HansZuidema@upcmail.nl =
33	From: "Hans Zuidema" HansZuidema@upcmail.nl Subject: Re: Fwd: 3DFusion Date: September 30, 2010 at 5:00:52 PM EDT To: "Bart Barenbrug" <bart@c3d-vr.com>, <steve.blumenthal@3DFusionUSA.com> Cc: "Walther Roelen" <walther_roelen@hotmail.com>, "Ilya Sorokin" <sorokin.ilya@gmail.com> Reply-To: HansZuidema@upcmail.nl =

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
34	From: <hanszuidema@upcmail.nl> Subject: Re: Screen throw distance, IGT Date: July 29, 2010 at 3:17:28 AM EDT To: Walther Roelen <walther_roelen@hotmail.com>, Hans Zuidema <HansZuidema@upcmail.nl>, steve.blumenthal@3dfusionusa.com Cc: Bart Barenbrug <bart@c3d-vr.com>, Mick Mc Donald <mick.mcdonald@telfort.nl>, Ilya Sorokin <sorokin.ilya@gmail.com> Reply-To: hanszuidema@upcmail.nl
35	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
36	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
37	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
38	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
39	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
40	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
41	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
42	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
43	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
44	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27
45	Post production setup By Bart Barenbrug & Stephen Blumenthal version 0.1 2010-04-27

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
46	From: Bart Barenbrug bart@c3d-vr.com Subject: Re: MTV Date: August 29, 2010 at 10:07 AM To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute grazinaseskeviciute@gmail.com, Ilya Sorokin sorokin.ilya@gmail.com, Stephen Blumenthal stephen3d@mac.com, Walther Roelen walther@c3d-vr.com
47	From: Bart Barenbrug bart@c3d-vr.com Subject: Re: MTV Date: August 29, 2010 at 10:07 AM To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute grazinaseskeviciute@gmail.com, Ilya Sorokin sorokin.ilya@gmail.com, Stephen Blumenthal stephen3d@mac.com, Walther Roelen walther@c3d-vr.com
48	From: Bart Barenbrug bart@c3d-vr.com Subject: Re: MTV Date: August 29, 2010 at 10:07 AM To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute grazinaseskeviciute@gmail.com, Ilya Sorokin sorokin.ilya@gmail.com, Stephen Blumenthal stephen3d@mac.com, Walther Roelen walther@c3d-vr.com
49	From: Bart Barenbrug bart@c3d-vr.com Subject: Re: MTV Date: August 29, 2010 at 10:07 AM To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute grazinaseskeviciute@gmail.com, Ilya Sorokin sorokin.ilya@gmail.com, Stephen Blumenthal stephen3d@mac.com, Walther Roelen walther@c3d-vr.com
50	From: Bart Barenbrug bart@c3d-vr.com Subject: Re: MTV Date: August 29, 2010 at 10:07 AM To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute grazinaseskeviciute@gmail.com, Ilya Sorokin sorokin.ilya@gmail.com, Stephen Blumenthal stephen3d@mac.com, Walther Roelen walther@c3d-vr.com
51	From: Bart Barenbrug bart@c3d-vr.com Subject: Re: MTV Date: August 29, 2010 at 10:07 AM To: steve.blumenthal@3dfusionusa.com Cc: Grazzy Seskeviciute grazinaseskeviciute@gmail.com, Ilya Sorokin sorokin.ilya@gmail.com, Stephen Blumenthal stephen3d@mac.com, Walther Roelen walther@c3d-vr.com

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
52	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3dfusion Date: November 18, 2009 at 2:23:18 PM EST To: steve.blumenthal@3dfusionusa.com, stephen blumenthal <stephen3d@me.com> Cc: Ilya Sorokin <sorokin.ilya@gmail.com>, Walther Roelen <walther@c3d-vr.com>, peter@c3d-vr.com, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
53	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 24, 2010 at 4:40:55 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
54	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 24, 2010 at 4:40:55 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
55	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 24, 2010 at 4:40:55 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
56	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 24, 2010 at 4:40:55 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
57	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 24, 2010 at 4:40:55 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
58	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 24, 2010 at 4:40:55 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
59	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 24, 2010 at 4:40:55 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
60	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Fwd: Intel Sandy Bridge Date: November 15, 2010 at 2:49:42 PM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: Walther Roelen <walther@c3d-vr.com>, Stephen Blumenthal <steve.blumenthal@3dfusionusa.com>, alex@3dfusion.com Reply-To: bart@c3d-vr.com
61	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3dfusion Date: November 18, 2009 at 2:23:18 PM EST To: steve.blumenthal@3dfusionusa.com, stephen blumenthal <stephen3d@me.com> Cc: Ilya Sorokin <sorokin.ilya@gmail.com>, Walther Roelen <walther@c3d-vr.com>, peter@c3d-vr.com, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
62	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3dfusion Date: November 18, 2009 at 2:23:18 PM EST To: steve.blumenthal@3dfusionusa.com, stephen blumenthal <stephen3d@me.com> Cc: Ilya Sorokin <sorokin.ilya@gmail.com>, Walther Roelen <walther@c3d-vr.com>, peter@c3d-vr.com, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
63	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3dfusion Date: November 18, 2009 at 2:23:18 PM EST To: steve.blumenthal@3dfusionusa.com, stephen blumenthal <stephen3d@me.com> Cc: Ilya Sorokin <sorokin.ilya@gmail.com>, Walther Roelen <walther@c3d-vr.com>, peter@c3d-vr.com, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
64	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: 3dfusion Date: November 18, 2009 at 2:23:18 PM EST To: steve.blumenthal@3dfusionusa.com, stephen blumenthal <stephen3d@me.com> Cc: Ilya Sorokin <sorokin.ilya@gmail.com>, Walther Roelen <walther@c3d-vr.com>, peter@c3d-vr.com, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
65	No date given - Document TS 35F 2D to 3D content conversion workflow
66	No date given - Document TS 35F 2D to 3D content conversion workflow
67	No date given - Document TS 35F 2D to 3D content conversion workflow
68	No date given - Document TS 35F 2D to 3D content conversion workflow
69	No date given - Document TS 35F 2D to 3D content conversion workflow
70	From: "Walther Roelen c3d" <walther@c3d-vr.com> Subject: FW: Keys redbox Date: October 22, 2010 at 11:51:26 AM EDT To: <steve.blumenthal@3dfusionusa.com> Reply-To: walther@c3d-vr.com
71	Date: October 4, 2010 at 5:47:51 AM EDT To: <ilya.sorokin@actforex.com>, "'Steve.Blumenthal'" <steve.blumenthal@3dfusion.com>, "'Bart Barenbrug'" <bart@c3d- vr.com> Reply-To: walther@c3d-vr.com
72	From: Bart Barenbrug bart@c3d-vr.com Subject: Re: FW: 3D up-conversion Date: August 21, 2010 at 6:59 PM To: stephen blumenthal steve.blumenthal@3dfusionusa.com Cc: Ilya Sorokin ilya.sorokin@3dfusionusa.com, Grazzy Seskeviciute =
73	Telephone call between Bart Barenbrug and Steve Blumenthal
74	Telephone call between Bart Barenbrug and Steve Blumenthal
75	Telephone call between Bart Barenbrug and Steve Blumenthal
76	Telephone call between Bart Barenbrug and Steve Blumenthal
77	Telephone call between Bart Barenbrug and Steve Blumenthal
78	Telephone call between Bart Barenbrug and Steve Blumenthal
79	Telephone call between Bart Barenbrug and Steve Blumenthal
80	Telephone call between Bart Barenbrug and Steve Blumenthal
81	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: John Pecora /3df Date: February 2, 2010 at 3:24:17 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Cc: Grazzy <grazina@threecubes.com> Reply-To: bart@c3d-vr.com

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
82	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: John Pecora /3df Date: February 2, 2010 at 3:24:17 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Cc: Grazzy <grazina@threecubes.com> Reply-To: bart@c3d-vr.com
83	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: John Pecora /3df Date: February 2, 2010 at 3:24:17 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Cc: Grazzy <grazina@threecubes.com> Reply-To: bart@c3d-vr.com
84	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: John Pecora /3df Date: February 2, 2010 at 3:24:17 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Cc: Grazzy <grazina@threecubes.com> Reply-To: bart@c3d-vr.com
85	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: aquarium Date: February 1, 2010 at 3:39:48 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com
86	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: aquarium Date: February 1, 2010 at 3:39:48 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com
87	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
88	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
89	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
90	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
91	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
92	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
93	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
94	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
95	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
96	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
97	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
98	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
99	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
100	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
101	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
102	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
103	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
104	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,

Trade Secret Number From Detailed List	Evidence Supporting Trade Secret
105	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
106	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
107	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
108	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
109	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Pandora!! Date: January 31, 2010 at 10:26:17 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com,
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115	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Early software Date: January 29, 2010 at 2:28:18 AM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: steve.blumenthal@3dfusionusa.com, Walther Roelen <walther@c3d-vr.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
116	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Early software Date: January 29, 2010 at 2:28:18 AM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: steve.blumenthal@3dfusionusa.com, Walther Roelen <walther@c3d-vr.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
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119	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Early software Date: January 29, 2010 at 2:28:18 AM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: steve.blumenthal@3dfusionusa.com, Walther Roelen <walther@c3d-vr.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
120	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Early software Date: January 29, 2010 at 2:28:18 AM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: steve.blumenthal@3dfusionusa.com, Walther Roelen <walther@c3d-vr.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
121	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Early software Date: January 28, 2010 at 2:10:04 PM EST To: Ilya Sorokin <sorokin.ilya@gmail.com> Cc: steve.blumenthal@3dfusionusa.com, Walther Roelen <walther@c3d-vr.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
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125	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Early software Date: January 26, 2010 at 5:26:39 PM EST To: steve.blumenthal@3dfusionusa.com, Ilya Sorokin <sorokin.ilya@gmail.com> Reply-To: bart@c3d-vr.com
126	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Early software Date: January 26, 2010 at 5:26:39 PM EST To: steve.blumenthal@3dfusionusa.com, Ilya Sorokin <sorokin.ilya@gmail.com> Reply-To: bart@c3d-vr.com
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129	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 25, 2010 at 2:31:32 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com
130	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 25, 2010 at 2:31:32 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com

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131	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 25, 2010 at 2:31:32 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com
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134	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 25, 2010 at 2:31:32 AM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Reply-To: bart@c3d-vr.com
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136	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 24, 2010 at 4:51:18 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com>, "grazina@c3d-vr.com" <grazina@c3d-vr.com> Reply-To: bart@c3d-vr.com
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140	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 20, 2010 at 2:42:44 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Cc: Grazzy <grazina@threecubes.com> Reply-To: bart@c3d-vr.com
141	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Avatar/ More/Steve Date: January 20, 2010 at 2:42:44 PM EST To: stephen blumenthal <steve.blumenthal@3dfusionusa.com> Cc: Grazzy <grazina@threecubes.com> Reply-To: bart@c3d-vr.com
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155	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Questions / 3Dfusion Date: January 14, 2010 at 2:15:05 AM EST To: Stephen Blumenthal <steve3d@lightlink.com>
156	From: Bart Barenbrug <bart@c3d-vr.com> Subject: Re: Questions / 3Dfusion Date: January 14, 2010 at 2:15:05 AM EST To: Stephen Blumenthal <steve3d@lightlink.com>
157	“FUSER” Software tool for Rotoscoping, conversion, correction, optimization. Source – Bart Barenbrug February 10, 2010

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